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CAR AND DRIVER

AUG/2017

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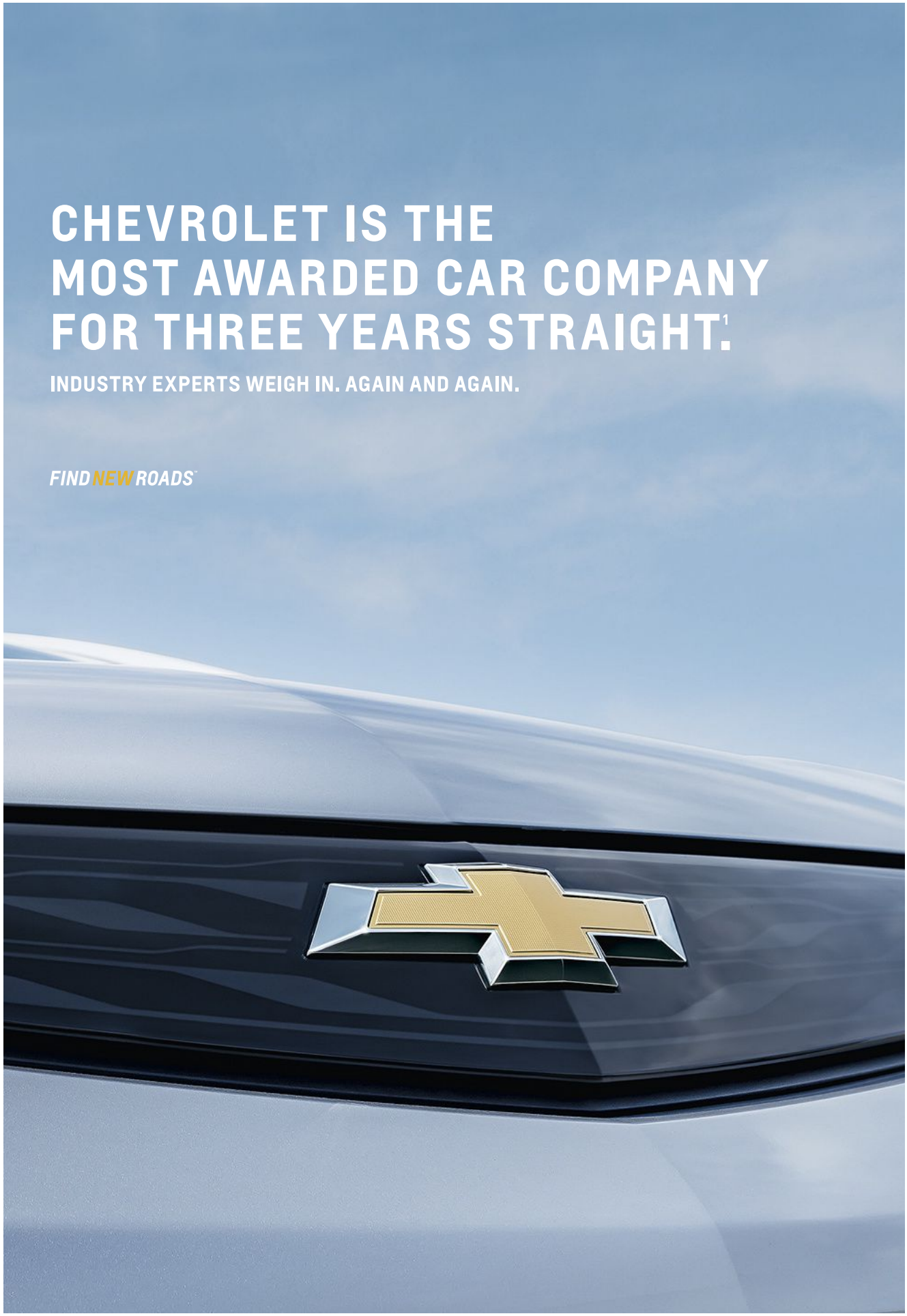
MINI-RAPTOR!

Chevy Colorado ZR2 off-road in Utah

p. 042

IN THIS ISSUE:

Summer-performance tires tested // Our Camaro SS hits 40,000 miles // BMW M5 prototype driven // How the Mercedes G-wagen became a fashion accessory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2017

MOTOR TREND

CAR OF THE YEAR®

2017 CHEVROLET BOLT EV

To select the vehicle it deems worthy of such a high distinction, *Motor Trend* magazine puts vehicles through their paces to find the one that best represents exceptional value, industry superiority and most significant development in engineering and design excellence. Chevrolet came out on top. All cars are run through the complete set of *Motor Trend* tests — acceleration, braking, figure eight — with focus on such qualities as handling, ride quality and refinement. Standard car tests include skid-pad ratings and quarter-mile times, with the track run conducted by Sports Car Club of America-licensed testers under normal test-drive conditions.

2017

J.D. POWER

VEHICLE DEPENDABILITY STUDY

2014 CHEVROLET SONIC, CAMARO, TAHOE AND SILVERADO HD

Dependability is essential in any vehicle, and Chevrolet is the only brand to receive J.D. Power Dependability awards for cars, trucks and SUVs two years in a row.[2] This year, it received "Most Dependable Small Car, Midsize Sporty Car, Large SUV and Large Heavy Duty Pickup." To determine its final list, J.D. Power examined issues reported over the past 12 months of ownership by original owners of 3-year-old vehicles. The study covers 177 specific symptoms grouped into eight major vehicle categories that include engine, transmission and the driving experience to interior ergonomics and audio, communication, navigation and controls.

2016

EDMUNDS.COM

MOST POPULAR ON EDMUNDS.COM & EDMUNDS TOP RATED

2016 CHEVROLET IMPALA, TRAVERSE, CORVETTE, CAMARO ZL1 AND VOLT

Chevrolet has six nameplates across six different segments that have been recognized by Edmunds.com in 2016. These designations include 2016 Most Popular on Edmunds.com and Top Rated. A Most Popular on Edmunds.com designation is given to the vehicles that had the most shopper consideration on Edmunds.com from January 1, 2015, through November 16, 2015. A Top Rated designation is bestowed upon the vehicles given an "A" rating by Edmunds.com based on its standardized road-test loop and test-track evaluation.

2017 IIHS

TOP SAFETY PICK

2017 CHEVROLET MALIBU AND VOLT

The Chevrolet Malibu earned a Top Safety Pick when equipped with the available Driver Confidence Package. The Chevrolet Volt received a Top Safety Pick+ when equipped with the available Driver Confidence II Package. To qualify for a 2017 Top Safety Pick, a vehicle must earn good ratings in five crashworthiness tests as well as an advanced or superior rating for front crash prevention. To qualify for a 2017 Top Safety Pick+, a vehicle must meet the requirements for a Top Safety Pick, plus have an acceptable or good headlamp rating.

2017

CAR AND DRIVER

10BEST

2017 CHEVROLET BOLT EV, CAMARO AND CORVETTE GRAND SPORT

Each year, dozens of new cars are put through thousands of miles of cumulative evaluation to determine the annual list of the very best automobiles for sale in America. And Chevrolet has risen to the top again and again across multiple segments. Winning isn't easy. In order to take home a trophy, a vehicle must offer good value, excel at its given mission and, critically, deliver a pleasurable driving experience. That's something that's built into every vehicle Chevrolet makes.

2017

KELLEY BLUE BOOK

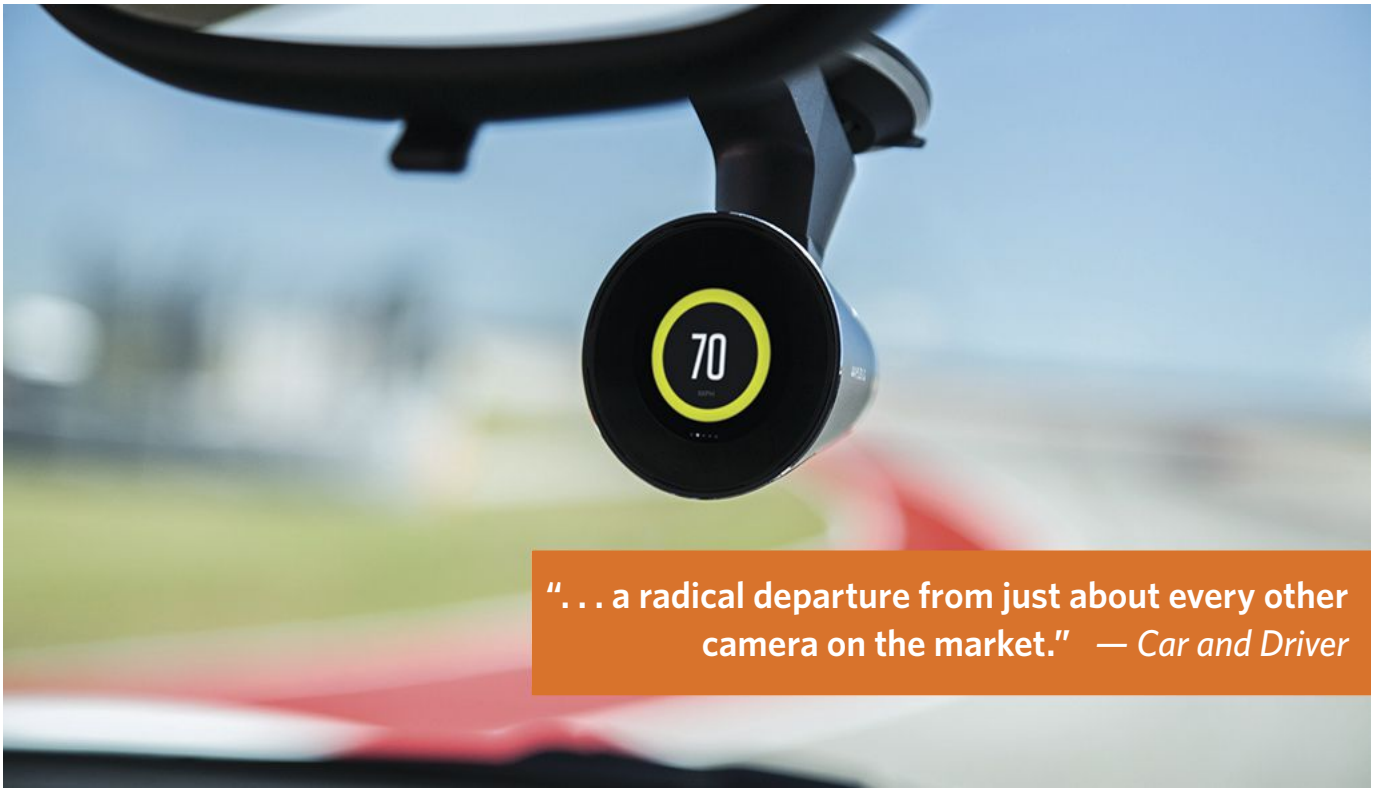
BEST RESALE VALUE

2017 CHEVROLET BOLT EV, COLORADO, SILVERADO HD AND SUBURBAN

Resale value is important to any vehicle, and Chevy tops the list. The 2017 Kelley Blue Book Best Resale Value Awards are based on best retained value over the first five years of new vehicle ownership.[3] Resale value projections take into account sales data, market conditions for each vehicle, competition within vehicle segments, expectations of the future economy and the combined experience of Kelley Blue Book's team of analysts.

1 Based on recognized industry awards for 2014–2016 year-end totals. 2 The Chevrolet Sonic, Chevrolet Tahoe, Chevrolet Silverado HD and Chevrolet Camaro received the highest numerical scores in their respective segments in the J.D. Power 2017 U.S. Vehicle Dependability Study, based on responses from 33,560 U.S. original owners of 2014 model-year vehicles after three years of ownership about problems experienced in the past 12 months, surveyed in October–December 2016. Your experiences may vary. Visit jdpower.com. 3 Vehicle's projected resale value is specific to the 2017 model year. For more information, visit Kelley Blue Book's KBB.com. Kelley Blue Book is a registered trademark of Kelley Blue Book Co., Inc.

CHEVROLET



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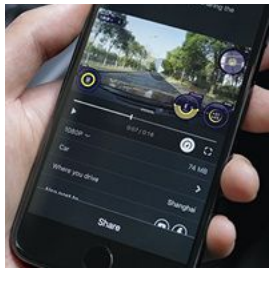

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Features

036
Road Test
HONDA CIVIC Si
Downsizing and turbocharging signal a break with the past—but only a partial one.
by Jared Gall

042
Car Meets Road
CHEVROLET COLORADO ZR2
Chevrolet's roughneck goes hunting for radioactive history.
by Aaron Robinson

054
Comparison Test
THREE-ROW MINIVAN SURROGATES
Dodge Durango GT, GMC Acadia Denali, Honda Pilot Elite, Mazda CX-9 Signature, 2018 Volkswagen Atlas SEL Premium.
by Jeff Sabatini

066
Summer-Tire Test
GUMSHOES
A Congressional-grade independent investigation into five sticky summer-performance tires.
by Eric Tingwall

072
Long-Term Test
2016 CHEVROLET CAMARO SS
Your quiet suburban cul-del-sac has officially been put on notice.
by Josh Jacquot

On the Cover

Green machine.
photography by Greg Pajo

Car and Driver. vol. 63, no. 2

In this Issue:

"A jeweled blanket finally doused the long twilight, the Milky Way a glistening vapor stretching from horizon to horizon."

—AARON ROBINSON, "ATOMIC PROSPECTOR"

042

BECAUSE THE ROAD NEVER TRAVELED IS

YOUR TRUE

INTRODUCING

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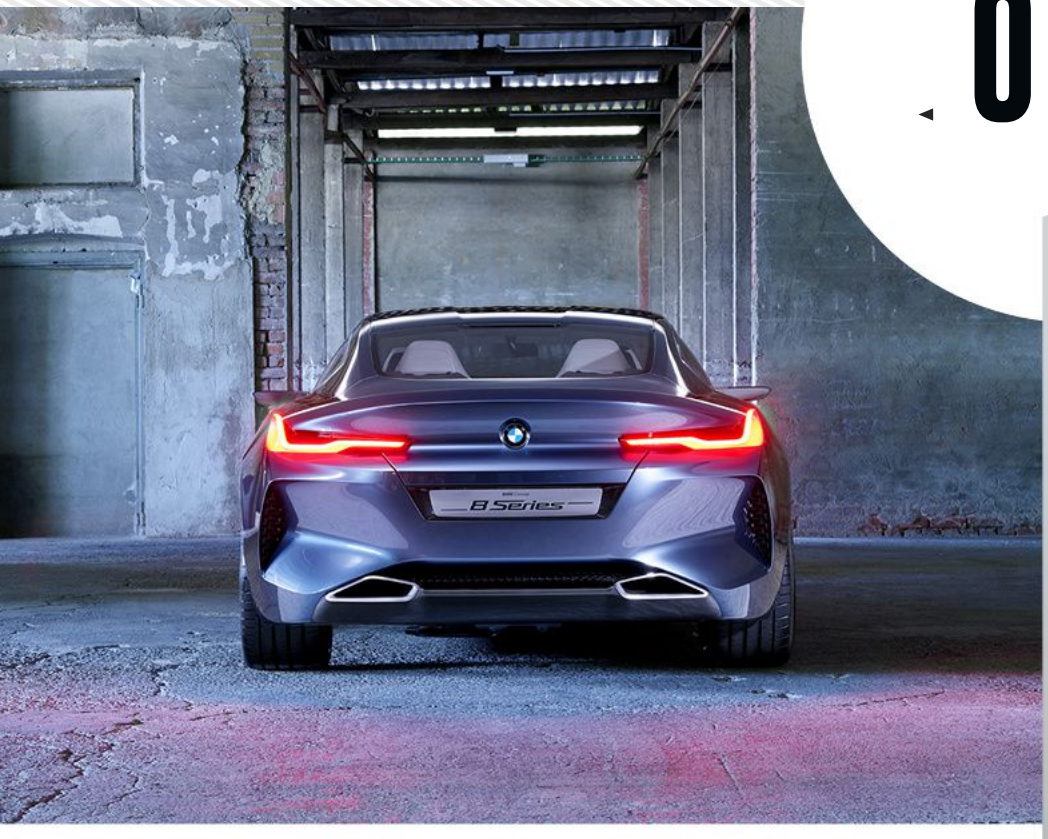
Car and Driver.
vol. 63, no. 2

019



Departments

Columnists

012 . EDDIE ALTERMAN
The sweet, dirty music of expansion.

030 . JOHN PHILLIPS
Do robot race cars dream of simulated spectators?

032 . AARON ROBINSON
Captain Woolf Barnato is going to be our new Instagram handle.

034 . EZRA DYER
The shart of the deal.

—

Upfront

019 . *Reveal of the Month*
BMW 8-SERIES CONCEPT
Taking the 6-series up a notch.

024 . *The Social History of . . .*
THE MERCEDES-BENZ G-WAGEN
How a farm implement became a status symbol.

026 . *Time Attack*
RACING KEEPS GETTING FASTER
Tracking the average speeds in motorsports' most famous contests.

028 . *Split-Second-ary Education*
MICROMANAGEMENT
You don't fully appreciate how quickly engines operate until their timing is measured in, y'know, time.

—

Drivelines

084 . 2018 BMW M5 . BMW improves the M5 with all-wheel drive and a torque converter.

088 . *Tested*
CHEVROLET CRUZE DIESEL
Crude awakening.

090 . 2018 LAMBORGHINI HURACÁN PERFORMANTE
Bullet with butterfly wings.

092 . *Tested*
VOLVO V90 CROSS COUNTRY T6 AWD . Volvo's wagon never tires of playing dress-up.

094 . *Tested*
PORSCHE PANAMERA TURBO
Holding it up to the company's sports cars reveals its true nature.

096 . 2018 AUDI SQ5 . This high-performance crossover is more of the same, only better.

098 . 2018 HONDA ODYSSEY
Kid tested; mother approved.

—

Etc.

009 . BACKFIRES
Wait, we run a story about NAFTA and get only two letters? And they're sane? Are you guys sleeping?

104 . WHAT I'D DO DIFFERENTLY
Walter Röhrl.

On the Web

—

2018 ACURA TLX
Despite appearances, it's more than just a nose job.
CarandDriver.com/2018TLX

—

2017 NISSAN TITAN SINGLE CAB
Nissan's best play against the domestics.
CarandDriver.com/2017TitanSingleCab

—

2017 MAZDA 3 2.0L AUTOMATIC SEDAN
Not even our favorite 3 . . . and still good.
CarandDriver.com/2017Mazda3Touring

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ACURA

PRECISION CRAFTED PERFORMANCE

Backfires:
The joyful noise of the commentariat, rebutted sporadically by Ed.

FLAPPERS

At last, a cover that spoke without inane text [May 2017]. More of this please.

—Johnny Michnay
North Olmsted, OH

I want to congratulate the *C/D* be-a-cover-ho marketing department on its ability to get the USPS to sneak the Alfa Romeo door hanger into the privacy of my home. Next time could it at least perforate the page so I can enjoy the cover without trashing the magazine?

—Bob Wood
York, PA

IF 6 WERE 8

Okay, I knew the Ford GT ["Pretty Sick," May 2017] wouldn't be cheap, but $450,000?! Who would pay that money for a Ford? You could buy two Astons with that money, or a Rolls, or something like that. Why spend it on a Ford? And I'm not saying Ford is bad—I'm a huge fan—but $450,000 is kind of pushing it.

—Sebastian Larsen
Vienna, VA

You could buy 18 electric Smarts for that kind of cash!—Ed.

Article by Eric Tingwall: Cool, illuminating, and succinct. Well done.

—Ron Coates
Scottsdale, AZ

Hey, love your mag and my subscription, but why in the heck haven't there been any test drives or comparisons say with the new Corvette Z06, Acura NSX, and all the supercars from Europe? I'm confounded.

—Michael Rider
Eureka, CA

SEDAN CHAIRS

My wife had agreed to let me get a Camaro, but threw her biggest ever temper tantrum in 30 years of marriage after learning Camaros have two doors. Knowing the Cadillac ATS and CTS are built on the same platform as the sixth-gen Camaro, I bought a 2015 certified pre-owned CTS with the V-6. This Cadillac is a "Camaro Touring Sedan." Turn off the traction and stability controls, and it's a very happy puppy that wants to play all the time.

But yeah, that CUE system—not that I text while driving, but I think it would be easier and safer to text while driving than to operate that thing. Thus, I was pleasantly surprised that the Cadillac CTS V-Sport finished second ["Climb Every Mountain," May 2017]. I expected third considering the competition.

—J. Wayne Gallman
Spartanburg, SC

Way to sneak in something relevant at the last minute, Gallman—Ed.

I was reading the luxury-sports-sedan comparison in your May 2017 issue and I was curious why the Lexus GS350 F Sport wasn't included.

—Brian Kinley
Question City, USA

No forced induction, no invitation—Ed.

In your review of the 2017 BMW 540i, you forgot to mention the ridiculous infotainment screen sticking up out of the top of the dash like someone superglued an iPad there. "How do I retract that?" I asked the salesman.

"You can't," he said.

"I don't like that."

"Nobody does," he sighed.

—Rick Poinsett
San Diego, CA

In a comparison test in 2000, you called the winning E39 M5, "quite simply the most desirable sedan in the world at any price." It had 400

Letter of the Month:

Color me disappointed that lifting the cover flap of the May issue didn't waft forth a sample whiff of GT, The Scent; Alfa Song; Quadrifoglio for Men; or even Giulia for Her.

—Jerry Prigmore, Bakersfield, CA

horsepower, 369 pound-feet of torque, a V-8, a six-speed manual, handled well, and was gorgeous. I think it cost $75,000. I've been driving mine ever since.

Fast-forward 17 years to the fourth-place 540i. It has 335 horsepower, 332 pound-feet of torque, six cylinders, an automatic, "numb steering and chassis," and costs $82,610. Eighty-two-freaking-thousand and no "M." But hey, it won the all-important "trunk space" and "rear-seat comfort" categories. BMW has lost its way with the 5-series. For $82K, I'd go find a decent E39 and use the rest of the money to buy . . . a couple more.

—Jack DeLessio
Tail of the Dragon, TN

You've got to be kidding. You gave the Cadillac top marks for exterior styling?

—Pat McDonald
Regina, SK

I've had a 2015 Cadillac CTS V-Sport for 23 months and I have to take issue with some of your complaints. Yes, the CUE infotainment system sucks. You can't see it in the daylight, and voice commands are horrible. However, the navigation system does work well, if you're lucky enough to get the destination entered.

My issues are your complaints about build quality. Your test unit must have been built on a Monday. There are no trim pieces falling off my car. There are no squeaks or rattles. And yes, it does run a 12.9 with a 112 mph trap speed. The tire and road noise you speak of is a by-product of the tires on the car. The Pirelli tires have different noise levels depending on what surface they're on. FYI, they love concrete. The CTS I have is quiet. I also have a 2017 BMW X5. It's my fourth BMW with an inline-six, and I get the smooth, sophisticated, and luxurious vibe. I truly believe if you had tested a car assembled on Wednesday, the Caddy would have won.

—Stephen Davis
Middletown, DE

In reading about yet another less-than-stellar comparison-test performance by BMW, I cannot help but wonder: BMW—at least with its non-M models—has evidently jumped the shark insofar as enthusiast drivers are concerned. Why haven't the many writers who have in the past accused you of being on BMW's payroll written to apologize for impugning your editorial integrity?

—Vic Lucariello
Archuleta County, CO

Because they're certain we're now being paid by someone else—Ed.

I've owned a current-generation Audi A6 3.0T Quattro with Sport package and now drive a 2017 Audi S6. I am puzzled why you chose top-of-the-line versions for some but not all of the vehicles in this test. A heavily optioned Audi S6 can be had for thousands less than several of your test vehicles, and I can attest to the fact that the S6 is a completely different animal than an A6. With its air suspension, otherworldly V-8, and Sport package, the S6 becomes an engaging thrill ride, cracking off gearchanges with instantaneous precision. You stated that you wanted to stick with the six-cylinder versions of these vehicles, but what is the reason for that, when a proper comparison involving a Mercedes-AMG and a Cadillac CTS V-Sport should certainly have involved the Audi S6?

—John Ahrens
Clarence, NY

It was cause for debate at the office, but in the end we decided to keep the test to supercharged or turbocharged sixes—Ed.

My first *Car and Driver* memory dates back to the March 1964 issue with the Pontiac Tempest GTO on the cover. I've bought cars based on your comparison tests. One of our favorite purchases was an 1988 Acura Legend coupe. An '86 had lost to a Mercedes-Benz because of a lower fun-to-drive score. The money saved on the Acura was well spent on many a good road trip. This is the first time in those 53 years I've been moved to write you. And it's because of the May 2017 "Climb Every Mountain" article. Congrats to David Beard, Tony Quiroga, and Aaron Robinson on a home run. It

"I TRULY BELIEVE IF YOU HAD TESTED A CAR ASSEMBLED ON WEDNESDAY, THE CADDY WOULD HAVE WON."

▼

Explained: Pondering the Pump

Something has been bothering me since I started purchasing gasoline decades ago, and I'm ready to put it to rest: I've always owned cars that required premium gasoline and I've always gone out of my way to find gas stations that have three nozzles, one for each grade, as I only want premium in my car. With single-nozzle dispensers, how much regular (that I paid a premium on) gets into my car? The outer hose leading to the nozzle is quite long and pretty wide, leading me to believe there is a substantial amount of regular that could be in the hose from the previous sale. I know it is full of gasoline, since when I activate the single-nozzle pump, there is no air that comes out before the gasoline. Why is this not addressed by gas stations?

—Colt Hinchman, Winston Salem, NC

A single-nozzle pump draws from two tanks, one for premium and one for regular. Midgrade pulls from both tanks and is mixed at the pump. That's just a bit of interesting trivia that we learned in researching your question. Now, to answer it: The fuel from the previous purchase does remain in the hose, which holds about 16 ounces. If the person before you pumped 87 octane, you will put a small amount of regular in your tank, but its effect on the octane rating of a multigallon fill is negligible.—*Ed.*

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came at the perfect time as I begin searching for a new sports sedan. That article is what this gearhead car buyer lusts for: comparison data and driving impressions on something I will buy. It made my heart pound. Now I'm going to test-drive the CTS V-Sport as soon as one can be located.

—Tom Majcher
Frankfort, KY

Just make sure it was built on a Wednesday—Ed.

Interesting comparison test, but how the heck did the Audi A6 3.0T Quattro add 0.6 second to its zero-to-60 time? The 2017 A6 did 60 in 5.2 seconds and the 2016 A6 3.0T managed 4.6 seconds. I own a 2016 Audi 3.0T (333 horsepower) and it is a fast, nimble car. Audi lists the 2017 A6 at 5.1 seconds and their numbers consistently underpromise. Is it possible you all got a problem A6? Thoughts?

—Dr. Dean Raffelock
Ashland, OR

Blame a slight increase in weight, production variation, California's 91-octane fuel, or all three. That S6 just keeps looking better and better, huh?—Ed.

Car and Driver is my favorite car magazine and I especially enjoy the comparisons, but I would enjoy them more if they were based on apples-to-apples comparisons. For example, May's sports-sedan comparison included a BMW 540i, and you complained about its chassis tuning. The vehicle you tested was equipped with the active dampers and roll stabilization in the Dynamic Handling package, which deletes the M Sport package's sport suspension in favor of the base comfort setup (as does xDrive). Your 540i did not have a suspension that "lowers the car 0.4 inch on stiffer springs," as you wrote. Deleting the Dynamic Handling package drops the price by $3500 (current price), restores M Sport suspension, and removes some of the computer-induced numbness that you experienced. Then you compared your comfort-tuned 540i to a Mercedes with the AMG treatment. I know you have to test the vehicles that are available to you, but at least publish the correct specs for readers who don't know any better. A proper future sports-sedan comparison would be a 540i with M Sport package or M Performance upgrades, or even an M550i. Sadly, BMW has worked hard in recent years to build a boring Euro-Lexus, but BMWs still are highly customizable to the individual's driving style. That just means putting some thought into properly equipping the car.

—Mike Pruitt
Leesburg, VA

You are correct that our test car was not lowered by 0.4 inch. According to the fine folks at BMW, the options on our test car make for the sportiest chassis available in a 540i—Ed.

COLD WAR, HOT RODS

As a young Army lieutenant in northern Germany from 1985 to '88, I secretly hoped to spot a

Editor's Letter:

As I write this letter, reciprocating saws and nail guns are cacophonating in the background, making the sweet, dirty music of expansion. We've blown out the north wall of our office to take over the adjacent two spaces,

adding a little breathing room for the talent we've been adding on the digital side—including the great Rich Ceppos, returning to *C/D* after 26 years. If you've visited our website lately, you'll know why. We are in the process of transforming caranddriver.com from the industry's best and most comprehensive news-and-reviews site to what we're sure will be its best and most comprehensive automotive decision-making tool for shoppers and enthusiasts alike.

To put numbers to things, we've gone from measuring about 20 automotive attributes in our testing, most of them dynamic (zero-to-60, cornering grip, sound levels), to analyzing more than 200—everything from outward visibility (a must in these fulsomely pillared times) to location and number of USB ports (another must in these days of kids in the rear seats looking for places to charge their phones).

Our most recent order of business was to add vehicle listings, displaying new- and used-car inventory to match your research. Our product and technology teams, headquartered in Atlanta, along with the partners in our ad-sales network, Jumpstart Automotive Media, made it so. We're bad, we're nationwide. And over the next year, we'll be adding more tools and functionality to take you all the way from awareness of a vehicle to its driver's seat.

There's precedent for this. Back in the days before the internet, when the Earth's crust was cooling, our magazine was not only the final authority on new cars, it was a sort of crude shopping tool for those who were in the market for a vehicle. Back in the days of newsstands, readers would grab it off the rack and then retire to their caves to read, by the light of burning tallow, the preview of the car that interested them. Then, hopefully, they'd come back the next month to read the road test of said car, then the comparison test. It took months to get the whole story.

Now, with the time compression afforded by digital media, you can research, compare, and, ultimately, trade your car and make a deal online within a week. Our replatformed and rebuilt site will pull all those tasks together into one cohesive experience that allows you to discover and price your perfect vehicle, on your schedule, on the device of your choosing. All along the way, we will be there, giving you the kind of objective testing for which we've become famous and the subjective recommendations for which we've become feared. Should be fun.

—Eddie Alterman

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SOXMIS [Soviet Exercise Mission] vehicle up to no good, thereby making me duty-bound to give chase in my Peugeot 205 GTI ["War Can Be Fought with Many Things, Sometimes Even Sandwiches," May 2017]. Had the Jeep SRT from your excellent USMLM article existed back then, I'm confident that repeated false sightings and pursuits would've landed me in Mannheim, a.k.a. the Fort Leavenworth of Germany. Thanks for the incredible article.

—Matt Blyth
York, PA

I completely enjoyed the article by Mike Duff because I lived it while stationed for 14 years in Germany in the USAF. I actually have a piece of the Berlin Wall from when it was torn down. Here is my true four-wheel-drive encounter with the Russians: In August 1976, our radar site along the East German border received two brand-new 1976 Dodge Power Wagon W200 Crew Cabs for command and control. One day we needed a very important part for the radar. We were five hours from our supply base, so the commander told me (the supply sergeant) to make a trip and get the part, and I was given the keys to the new truck. As I was driving down the autobahn at a smooth 70 mph, I noticed a small Russian car behind me matching my pace. So I said, why not? and punched that V-8 and took off at 90 mph until I was out of sight of the other car. I then backed off to 70 mph, and it took them 30 minutes to catch up to me again. Of course, I had to file a report about the encounter, minus the speed test. Your article brought back many memories.

—Sgt. David W. Puckett
Indianapolis, IN

"I USUALLY LIKE AARON ROBINSON'S WRITING A LOT, BUT HE JUST FORFEITED SOME CREDIBILITY POINTS WITH HIS REVIEW OF THE HYUNDAI IONIQ."

PENNYWISER

2017 Hyundai Ioniq Hybrid

Korea's attempt to out-Prius the Prius.

by Aaron Robinson

photography by Greg Pajo

ISN'T IT IONIQ?

I usually like Aaron Robinson's writing a lot, but he just forfeited some credibility points with his review of the Hyundai Ioniq ["Pennywiser", May 2017]. He wrote "If Toyota can be faulted for something . . . it's for not expanding the Prius subbrand into body styles such as crossovers."

Bzzzzt. Wrong. Toyota started selling a crossover version called the Prius V in 2011. They have also had a Highlander hybrid since the mid-2000s and put a hybrid in the RAV4 in 2016. The "potato" is not alone in hybridland.

We have a Prius V and it is a very good

little car (within the boundaries of Toyota's "slow = efficient" philosophy). We have three over-six-footers in our family and we fit comfortably in front or back. Average mileage under my wife's lead foot is 45 mpg; I can coax it up to 48 with some hypermiling tricks. I think I'm required to reclaim my gearhead cred by mentioning that our other car is a Porsche 911. Between the two, our fleet average is still about the same as the two VW diesels that they replaced. Guess which pair we prefer?

—Vance Bass
Albuquerque, NM

The Prius V isn't a crossover and the RAV4 hybrid isn't a Prius—Ed.

TRADES CONSIDERED

Jeff Sabatini's article on NAFTA ["Smashing NAFTA Apart Is Harder than It Seems, Especially when You're Blindfolded," May 2017] was very informational and showed both sides of the issue. I sure would like to know the net difference in delivered cost of the Cruze automobiles and if the savings is mostly from the cost of non-unionized labor. As more and more robots replace workers, I would think the labor piece would be diminished. Go figure.

—Dave Thomas
Cincinnati, OH

Yes, Sabatini, NAFTA is great for the auto industry and it's been a windfall for Mexico. You forgot to mention that NAFTA destroyed Detroit. NAFTA caused hundreds of thousands of middle-class American workers to lose their jobs. NAFTA benefits multinational auto manufacturers who no longer care about America or American union workers.

—Gregg VanVechten
Carlsbad, CA

HEMI AHEAD

Living in the Rust Belt, I think the idea of an AWD muscle car sounds like a winner ["More Traction, Less Satisfaction," May 2017]. Why didn't others think of it sooner? I think that would certainly boost sales up here in the North. I do not think the recipe is complete in regards to the Challenger, though. Don't get me wrong, it's a great car. My problem is with that powertrain combination. The AWD version only comes with a V-6.

If Dodge really wants to make a legit AWD muscle car, I have an idea: Stuff the Challenger RT's 5.7-liter Hemi into it. As is, I see it as a missed opportunity to turn the Challenger into a (relative, at least in comparison with other Fiat Chrysler products) cash cow and profit generator.

—Markus Bachman
Bloomington, MN

Anyone who thinks you can put winter tires on a rear-drive V-8 and get through the winter has never lived anywhere it actually snows—like upstate New York. The Challenger GT's muscle-car soul is intact, as it is in fact much quicker than my original muscle car, a '90 Mustang 5.0. When I drop my 12-year-old off at school, all his buddies think I am the coolest dad in town.

—Sean Hynes
Syracuse, NY

Maybe you don't consider Michigan a place where it actually snows, but we have no problem getting through the snow with rear-drive V-8s and winter tires—Ed.

FALLING STARS

Regarding Alter-man's rant on the current Mercedes-Benz SL ["Editor's Letter," May 2017]: I'm proud to say that I have owned seven of them since 1973 and my current 2013 SL550 is head and shoulders better—in almost every way—than any of the others. I'll admit that the exterior sheetmetal is not the most beautiful, but when you are behind the wheel, the car is pleasurable and exciting to drive. Eddie should make sure to drive an R231 equipped with Mercedes' fabulous ABC (Active Body Control) that, unfortunately, is now a $4000 option and was previously standard on the R230. Makes all the differ-

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ence in the world; the car rides and handles like a dream. And, by the way, I *can* "stretch for a Bentley," but I *choose* not to.

—Allen Drucker
Newport Beach, CA

I enjoyed the column by Eddie Alterman in the May issue. First of all, let me start by saying I own the latest Mercedes SL550. Sometime in the mid-'70s, my neighbor bought a new 450SL. Dark red with tan leather. Long hood, short deck, and the most perfect fit and finish I had ever seen. It was the king of the hill, the top of the Mercedes line.

The problem is that the SL is no longer Mercedes' best. Eddie, you can now join me in having a bad case of S-class Cabriolet-ness. Gosh, I love that car. Make mine a white AMG.

—Ed Woods
Greensboro, NC

Alterman should give up deferred gratification and buy a sound R129 SL500 while they are affordable. That's what I did.

—Steve Wigzell
Gloucestershire, England

SIDE EFFECTS

I'm no physician, but I think John Phillips may need to have his Adderall dose increased. Or decreased.

—Cary Robinson
Brewster, NY

WHEELER DEALER

Aaron Robinson's column [May 2017] about dealers almost had me feeling sorry for them until I remembered the treatment from some dealers whom I walked out on, refusing to do business with them. The Infiniti dealer who said company policy prevented a drive on the interstate, the low-priced Toyota 4Runner advertised in Saturday's paper that was a "mistake," the Acura dealer who suddenly added a gazillion fees. Instead, I've found smaller family-owned dealers who are up front, candid, and offer no BS. They get my business, and yes, I do realize they struggle with all that's mentioned in the article, yet they stay in business with integrity.

—Raymond Archacki
Berlin, CT

As a *C/D* subscriber for more than 50 years and a retired 38-year veteran of the retail-car business—same brand at two dealerships—it was with almost tearful joy when I realized after reading Aaron Robinson's May column: *Someone out there really understands!* This should be required reading for anyone entering a dealership. A heartfelt "Thank You" to Mr. Robinson from all of us out there.

—Stephen M. Newman
Foley, AL

STUMP THE CHUMP

Ezra Dyer's column in the May 2017 issue should be a hyperlink for the antonym of "stumped" in the online version of the Merriam-Webster dictionary. It was a gripping read, and sounded like Dyer was justifying his secret collection of lumberjack shirts. Next, the F-350 Super Duty shows how Stonehenge was created.

—Mark Shakespeare
Bentonville, AR

Dyer's May 2017 column is the best thing I've read in your magazine in years, and I love your magazine. Keep up the great work.

—Carl Klemmer
Birmingham, MI

BOO-URNS

Ed Welburn's interview ["What I'd Do Differently," May 2017] pretty much mirrors the majority of GM's designs over the last 40 years—bland.

—Mark Junkersfeld
New Brighton, MN

Welburn's answer to the first question of his "What I'd Do Differently" piece made me laugh out loud. "I'll never forget it . . . I *think* it was a '75." Emphasis mine.

—Rod Davies
Baldivis, Australia

JOY DIVISION

Perhaps *Car and Driver* should be renamed *Editor and Driver.* The narcissistic promotion of self, mental masturbation, and dick wagging by your contributors now tends to overshadow the provision of automotive information.

—Daniel Ruops
Ramona, CA

How many times do we have to tell you Ruops: We don't write the letters, the readers do—Ed.

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Reveal of the Month

ACE OF AN 8

BMW GETS READY TO TAKE THE 6-SERIES UP A NOTCH.
by Jens Meiners

WHEN THE E24 BMW 6-SERIES expired with the '80s, the company decided it was time to take its big coupe upmarket, replacing the 6 with an 8 based on the 7-series sedan. Built to impress, the 8-series was originally offered only with a V-12. It was also priced so high that many 6-series customers couldn't or wouldn't make the leap. BMW's 8-series output totaled less than a third of 6-series production, and the company pulled the plug in 1999, eventually relaunching the 6 in 2003. But now BMW is nudging its big two-door upmarket again.

001
In the grand BMW tradition of naming colors after racetracks, this paint is called Barcelona Grey Liquid, a reference to Catalunya.

photography by MATT HOWELL

▼ STYLING

The look of BMW's sedans may have become somewhat stale, but the 8-series concept BMW unveiled at the Concorso d'Eleganza on the shores of Italy's Lake Como this year might portend an awakening in the Werke's design studios. The bold proportions emphasize its longitudinal-engine architecture, and the forks atop the slats in the brand's signature kidney grille suggest a willingness to fuss with even the most sacred of styling cues.

But there's also much to tie this concept to BMW's present-day lineup. Protruding taillights evoke the daring look of the i8

▲ INTERIOR

Though it will sit beside the 7-series atop the lineup, the 8 won't be remotely as spacious. It's snug, with a high center console and low seating position making the interior feel far smaller than it is. Nothing about its control layouts or detailing indicates any sort of interface revolution, though the iDrive controller and gear selector are made of Swarovski glass. Seeing as the jewelry company's crystals made it into the headlights of the Mercedes-Benz S-class, it wouldn't surprise us if BMW uses them in the production model. After all, Munich's product planning often happens in Stuttgart, and vice versa.

while the mammoth cutouts in the front and rear bumpers recall the aggressively scalloped M2. The current 5-series wears similarly gimmicky trapezoidal exhaust finishers. The 8er's edge will surely soften when it reaches production, but the concept gives a clear indication of what's to come.

▼ CHASSIS

Despite a designation that suggests this is a 7-series coupe, the 8 will retain the current 6-series' association with the 5-series sedan. While BMW's larger, odd-numbered sedans share some components, expect the new range-topping coupe to feel more like a 5-series than a 7. It'll be a couple of inches shorter and as much as 200 pounds lighter than the current 6-series. The body and chassis will be composed primarily of a mix of steel and aluminum, with a few select pieces cast in magnesium. As

001
Morph this interior just ever so slightly toward what's in the current 7-series, and you're picturing the production 8. We expect even those door pulls and speaker grilles to make it onto the showroom model.

002
Not so much the carbon-fiber-shell sport seats, though. They're a little extreme for even the upcoming M8 [see opposite page].

003
Like the Lexus LC, the 8-series will have a tapered greenhouse. But given BMW's relatively conservative styling language, don't expect haunches as pronounced as the LC's.

002

004

005

on the current 5, rear-wheel steering will be optional. The 8-series will replace the full 6-series lineup, so if you need more room (and more doors), there will be an 8-series Gran Coupe. And if you are okay with even less room, there will be a convertible as well.

▼ POWERTRAIN

This next-generation 8 will be more modestly cylindered than BMW's first: There will be an 840i with a turbocharged 3.0-liter inline-six and an 850i powered by a twin-turbo 4.4-liter V-8—though even the six, which makes up to 335 horsepower in today's BMWs, will surpass the output of the original 850i's 12-cylinder. While it must be tempting for BMW to go after the Mercedes-Benz S65, we expect the minuscule take rate of 12-cylinder S-classes will keep BMW from bothering. And we expect the 8's prestigious positioning to preclude the offering of a hybrid model. Europe will get a diesel, but we won't. ZF's eight-speed automatic will be the only transmission choice, and all 8s but the base six-cylinder cars will be all-wheel drive.

▼ ARRIVAL AND PRICING

The 8-series will come to market in late 2018 as a 2019 model. Pricing will creep north of the 6-series' in accordance with the 8's upmarket positioning. Six-cylinder cars will start below $100,000, but the V-8 likely won't. The competition is thin. Porsche isn't exactly working overtime on that rumored Panamera coupe, leaving the Lexus LC and the Mercedes-Benz S-class coupe as primary rivals. But we hear Daimler will abandon the latter and, as BMW is doing with the 6-cum-8, take the next E-class coupe upmarket. The two might learn the same lesson at the same time: Get the price and package right, and you can call your big coupe whatever you want.

004
In production, 19-inch wheels will be standard, with 20s optional. There's a chance that BMW will offer 21s like the concept's for people who find uncommon joy in replacing bent rims.

005
Real gauges are dead. Long live reconfigurable digital approximations thereof! Seeing as both the 5- and 7-series have digital dashes, the 8 is a shoo-in for one, too.

▼ M8? YES, M8

Of course there will be an M8. BMW confirmed it by turning a few demonstration laps in a camouflaged example at this year's 24-hour race at the Nürburgring. Regular 8-series will use carbon fiber for decorative purposes only, but the M8 should offer a roof panel formed from the lightweight weave. Like the upcoming M5, it'll have a beefed-up version of the twin-turbo 4.4-liter V-8, churning out more than 600 horsepower, and standard all-wheel drive. Also like the M5, it'll have a rear-drive mode for serious shenanigans. And for those wanting M speed in a more civilized car, an Alpina B8 is a near certainty as well.

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The Social History of...

THE MERCEDES-BENZ G-WAGEN

HOW A FARM IMPLEMENT BECAME A STATUS SYMBOL.
by Brett Berk

THE FIRST DESIGN STUDIES for the Mercedes-Benz Geländewagen were made in 1973, appropriately, out of wood. Clay was far too amorphous a material for the domineering angularity of this proto-SUV. Its styling suited the G-wagen's intent when it was released globally (but not in the U.S.) in 1979. "It was meant to be an off-road vehicle for civilian and non-civilian use," says Marcus Maurer, the model's current technical director. "So the vehicle was developed very form-follows-function."

This meant meeting military demands (one of the first large orders came from the Shah of Iran, though it was canceled when the Islamic Revolution deposed him). Features included a narrow track, locking differentials, and, on convertibles, a folding windshield for easy shipping. But the G's actual use immediately went off the rails—or, rather, not off the rails. As with contemporary trucks such as the Range Rover, well-heeled urban and suburban consumers were drawn to the G-class's rugged good looks, but the Benz had an added aura of security and menace.

Aware of these upscale buyers, Mercedes added a more luxurious iteration to the lineup in 1989. Known internally as the 463, it was available with wood trim, leather seats, and anti-lock brakes. It quickly became the best seller, accounting for more than 70 percent of orders.

Though the truck wasn't officially available in America, casual importers sold them borderline legally on the gray market. When that practice was outlawed, one of these shops, Europa, began federally certifying and retailing G-wagens, their limited availability driving prices north of six figures and ensuring the truck's desirability among customers who wanted what others couldn't have. The truck's status was already cemented when Mercedes began U.S. sales in 2002. As a conspicuous, contemporary, hand-built anachronism, it acquired the glaring trophy status awarded to McIntosh tube amps and Purdey shotguns.

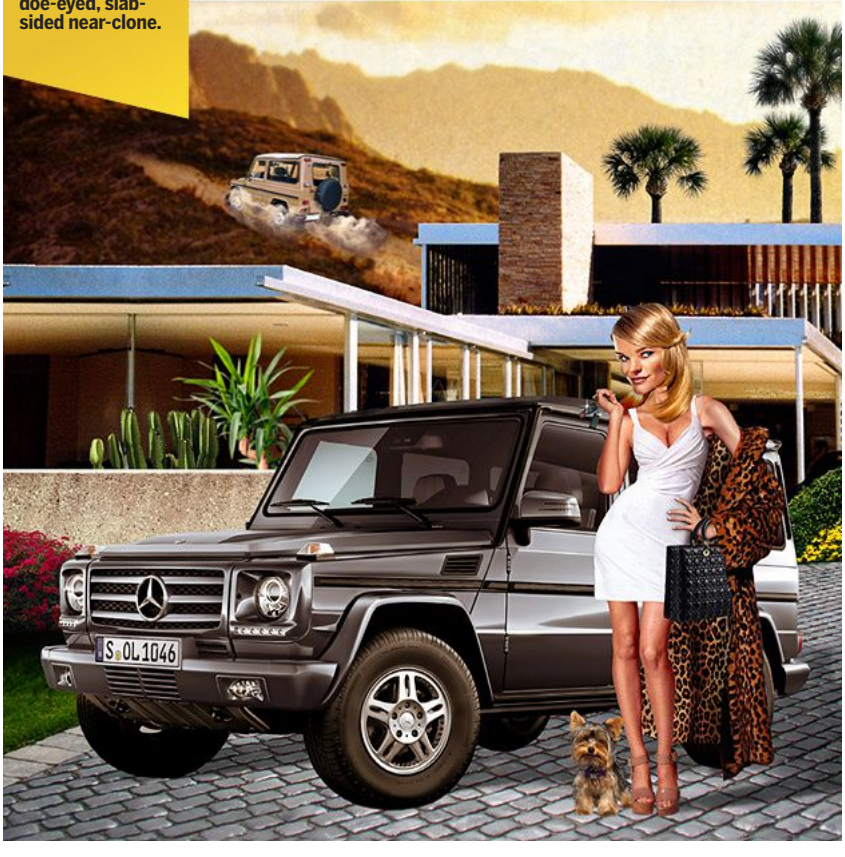
The G has demonstrated remarkable staying power. Mercedes intended for the 2007 GL to replace it, but instead decided to keep it alive for its recognizable (and bankable) appearance. Remarkably, the truck has achieved record American sales each of the past four years. It is also the Mercedes most often sold in AMG trim, a highly profitable upsell for which more than half of U.S. G buyers opt. Benz has lately released increasingly capable and luxurious versions of the G-wagen: the 12-cylinder G65; the tri-axle G63 6x6; the hard-core, wide-body G500 4x4², and the extended-wheelbase, half-convertible, $500,000 Mercedes-Maybach G650 Landaulet.

For those with no hope of making shah, the vintage G-wagen market is heating up. "You can take a 2011 truck and put on a classic '80s front clip, fender flares, and wheels so it looks old, not like a flashy Kardashian-Starbucks grocery-getting thing," says Tim Golden, whose Mastodon Motor Company in Denver sells about 60 older Gs per year. Two-door 463 diesels are also in demand.

Golden attributes the G-wagen's ongoing popularity to its iconic design. "It's kind of like a Rolex. It doesn't matter if you have an older style or if you just went to the jewelry store and bought the newest one. You still have a Rolex," Golden says. "And that's a G-class. It's a timeless piece."

SAME AS THE OLD BOSS

An all-new G-wagen is anticipated in 2019. Though it will be more pliant and more luxurious, don't expect anything radical. "We have to be very careful with the modernization," Mercedes' Maurer says. "The most important thing is that you can recognize a G-class as a G-class." Spy shots indicate a doe-eyed, slab-sided near-clone.



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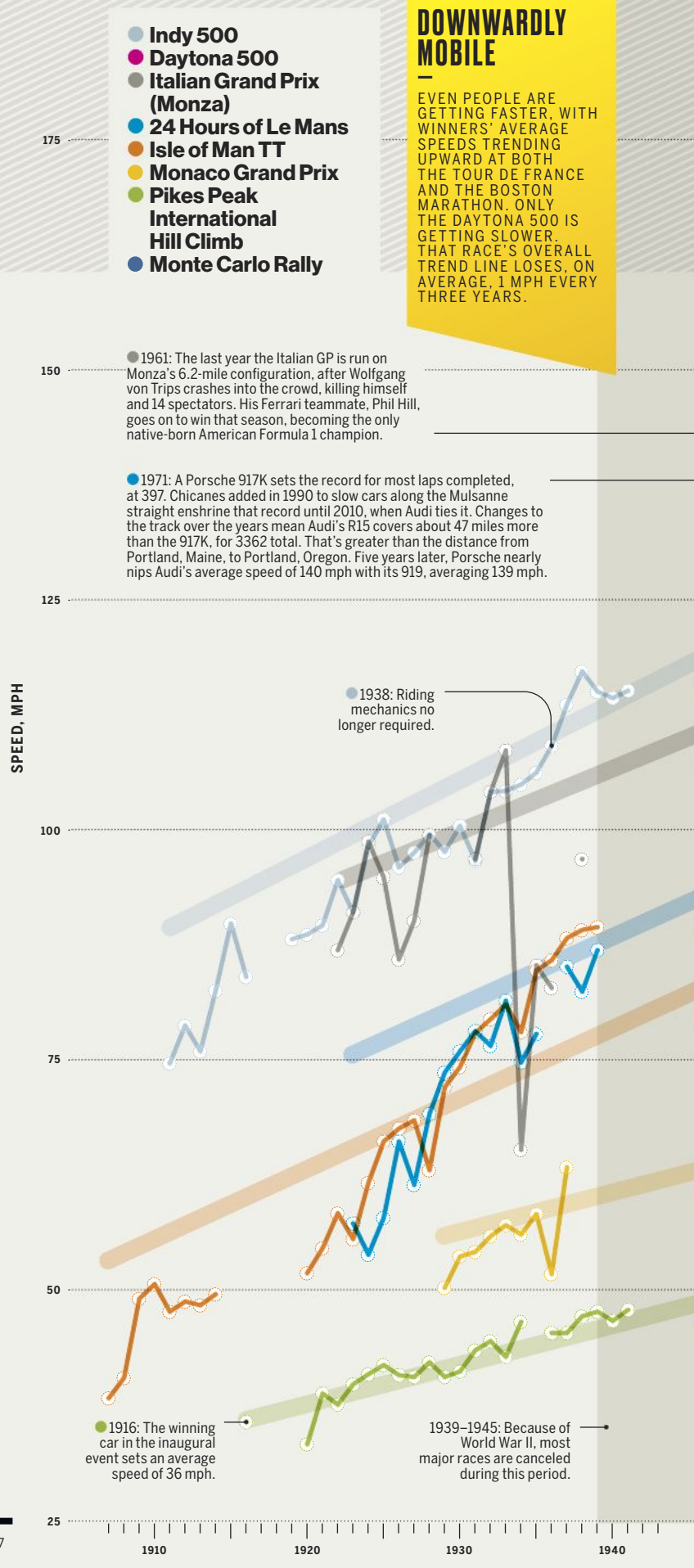
RACING KEEPS GETTING FASTER, DESPITE ALL EFFORTS

TRACKING THE AVERAGE SPEEDS IN MOTORSPORTS' MOST FAMOUS CONTESTS. ***by K.C. Colwell***

TODAY'S CURMUDGEONS LIKE TO remember the racing of yesteryear as if it were all smiles, a bright Norman Rockwell painting. In reality, it was a brutal and deadly time. But to old eyes starry with nostalgia, the safety of modern racing cars doesn't compensate for the thrills of the old days.

In most racing leagues, safer means slower. At least initially; it almost always takes a few years for engineers to gain back the speed that sturdier, heavier crash structures and aerodynamic changes often subtract. Organizers also slow down the tracks with chicanes and modified corners. Sometimes, those changes require decades of engineering development before the average speed reaches what it once was.

So even if the progress isn't strictly linear, we know that a modern race car is capable of faster speeds than its predecessors. But how much faster is the racing? On these pages, we've compiled the average speed of the winning car for eight marquee motorsports events. The general trend is that racing is indeed getting faster, with one exception.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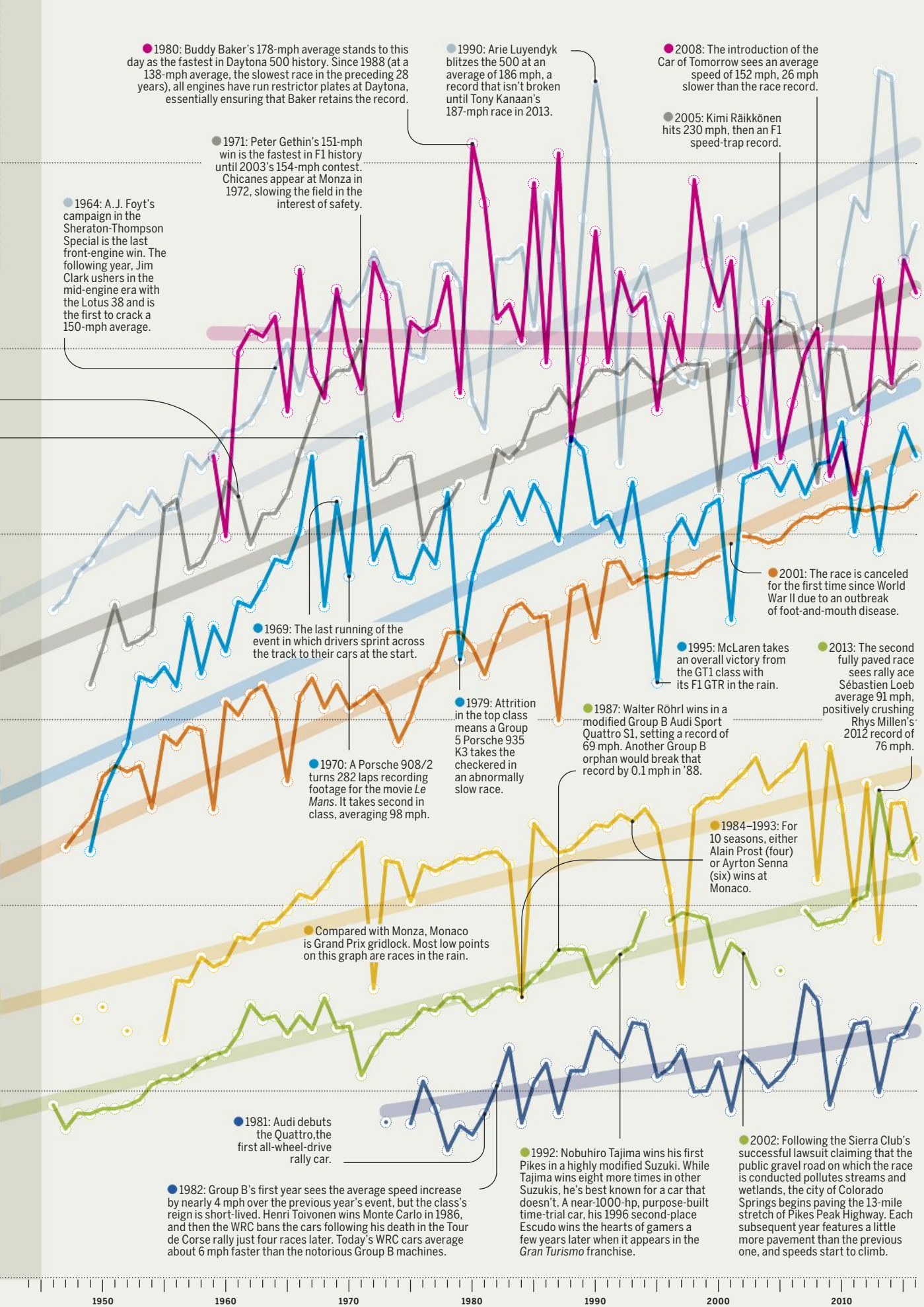
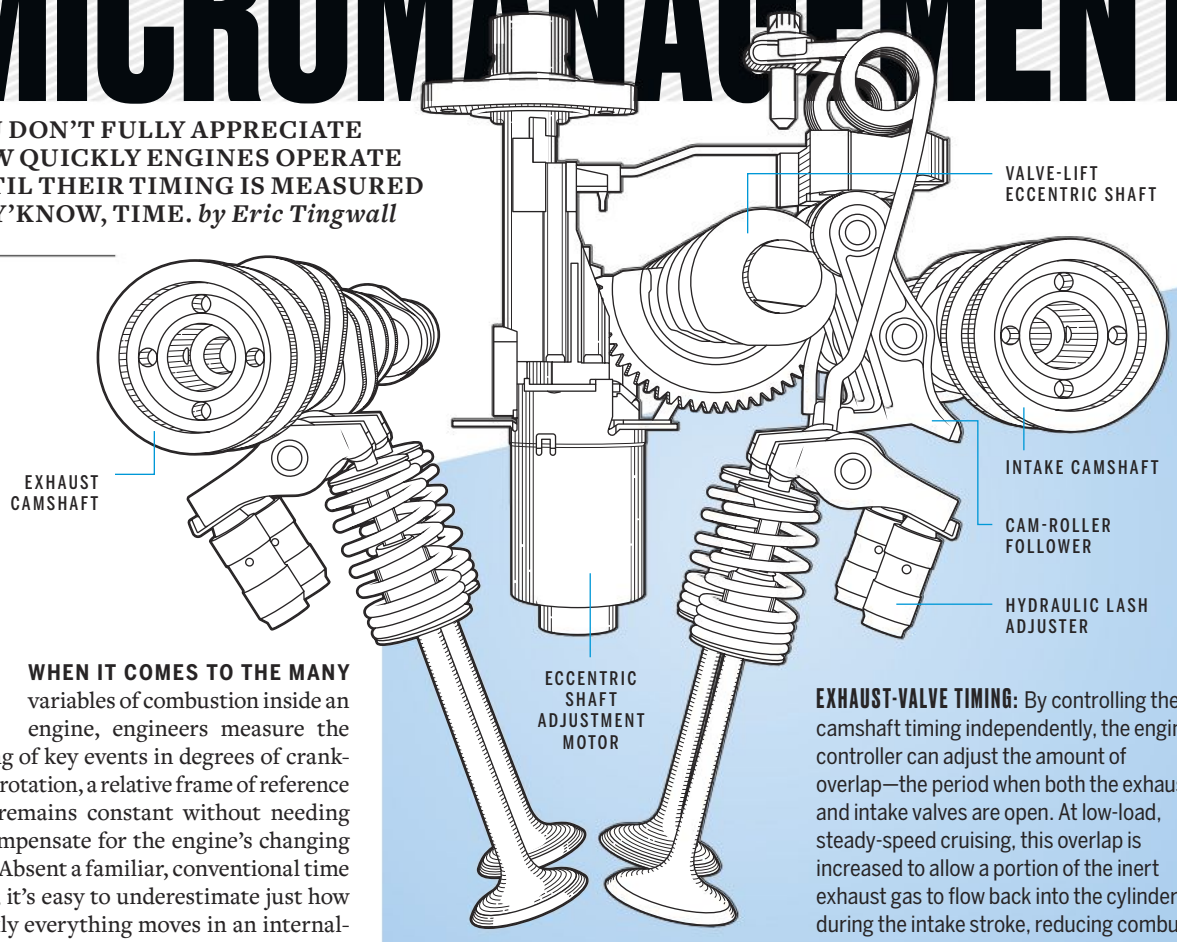
DOWNWARDLY MOBILE
EVEN PEOPLE ARE GETTING FASTER, WITH WINNERS' AVERAGE SPEEDS TRENDING UPWARD AT BOTH THE TOUR DE FRANCE AND THE BOSTON MARATHON. ONLY THE DAYTONA 500 IS GETTING SLOWER. THAT RACE'S OVERALL TREND LINE LOSES, ON AVERAGE, 1 MPH EVERY THREE YEARS.
1961: The last year the Italian GP is run on Monza's 6.2-mile configuration, after Wolfgang von Trips crashes into the crowd, killing himself and 14 spectators. His Ferrari teammate, Phil Hill, goes on to win that season, becoming the only native-born American Formula 1 champion.
1971: A Porsche 917K sets the record for most laps completed, at 397. Chicanes added in 1990 to slow cars along the Mulsanne straight enshrine that record until 2010, when Audi ties it. Changes to the track over the years mean Audi's R15 covers about 47 miles more than the 917K, for 3362 total. That's greater than the distance from Portland, Maine, to Portland, Oregon. Five years later, Porsche nearly nips Audi's average speed of 140 mph with its 919, averaging 139 mph.
SPEED, MPH
175
150
125
100
75
50
25
1938: Riding mechanics no longer required.
1916: The winning car in the inaugural event sets an average speed of 36 mph.
1939–1945: Because of World War II, most major races are canceled during this period.
1910
1920
1930
1940


1980: Buddy Baker's 178-mph average stands to this day as the fastest in Daytona 500 history. Since 1988 (at a 138-mph average, the slowest race in the preceding 28 years), all engines have run restrictor plates at Daytona, essentially ensuring that Baker retains the record.
1990: Arie Luyendyk blitzes the 500 at an average of 186 mph, a record that isn't broken until Tony Kanaan's 187-mph race in 2013.
2008: The introduction of the Car of Tomorrow sees an average speed of 152 mph, 26 mph slower than the race record.
2005: Kimi Räikkönen hits 230 mph, then an F1 speed-trap record.
1971: Peter Gethin's 151-mph win is the fastest in F1 history until 2003's 154-mph contest. Chicanes appear at Monza in 1972, slowing the field in the interest of safety.
1964: A.J. Foyt's campaign in the Sheraton-Thompson Special is the last front-engine win. The following year, Jim Clark ushers in the mid-engine era with the Lotus 38 and is the first to crack a 150-mph average.
2001: The race is canceled for the first time since World War II due to an outbreak of foot-and-mouth disease.
1969: The last running of the event in which drivers sprint across the track to their cars at the start.
1995: McLaren takes an overall victory from the GT1 class with its F1 GTR in the rain.
2013: The second fully paved race sees rally ace Sébastien Loeb average 91 mph, positively crushing Rhys Millen's 2012 record of 76 mph.
1979: Attrition in the top class means a Group 5 Porsche 935 K3 takes the checkered in an abnormally slow race.
1987: Walter Röhrl wins in a modified Group B Audi Sport Quattro S1, setting a record of 69 mph. Another Group B orphan would break that record by 0.1 mph in '88.
1970: A Porsche 908/2 turns 282 laps recording footage for the movie *Le Mans*. It takes second in class, averaging 98 mph.
1984–1993: For 10 seasons, either Alain Prost (four) or Ayrton Senna (six) wins at Monaco.
Compared with Monza, Monaco is Grand Prix gridlock. Most low points on this graph are races in the rain.
1981: Audi debuts the Quattro, the first all-wheel-drive rally car.
1992: Nobuhiro Tajima wins his first Pikes in a highly modified Suzuki. While Tajima wins eight more times in other Suzukis, he's best known for a car that doesn't. A near-1000-hp, purpose-built time-trial car, his 1996 second-place Escudo wins the hearts of gamers a few years later when it appears in the *Gran Turismo* franchise.
2002: Following the Sierra Club's successful lawsuit claiming that the public gravel road on which the race is conducted pollutes streams and wetlands, the city of Colorado Springs begins paving the 13-mile stretch of Pikes Peak Highway. Each subsequent year features a little more pavement than the previous one, and speeds start to climb.
1982: Group B's first year sees the average speed increase by nearly 4 mph over the previous year's event, but the class's reign is short-lived. Henri Toivonen wins Monte Carlo in 1986, and then the WRC bans the cars following his death in the Tour de Corse rally just four races later. Today's WRC cars average about 6 mph faster than the notorious Group B machines.
1950
1960
1970
1980
1990
2000
2010

Split-Second-ary Education

MICROMANAGEMENT

YOU DON'T FULLY APPRECIATE HOW QUICKLY ENGINES OPERATE UNTIL THEIR TIMING IS MEASURED IN, Y'KNOW, TIME. ***by Eric Tingwall***



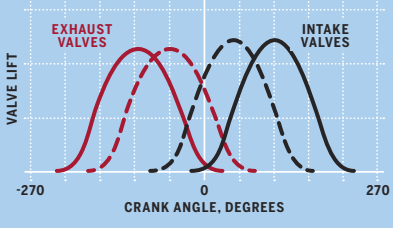
WHEN IT COMES TO THE MANY variables of combustion inside an engine, engineers measure the timing of key events in degrees of crankshaft rotation, a relative frame of reference that remains constant without needing to compensate for the engine's changing rpm. Absent a familiar, conventional time scale, it's easy to underestimate just how quickly everything moves in an internal-combustion engine. Add in the capabilities of modern electronics and controls that optimize valve events, fuel injection, and spark ignition for power or efficiency, and firing on all cylinders depends on millisecond precision.

As just one example, BMW's N55 turbocharged inline-six engine combines adjustable phasing of both the intake and exhaust cams with variable intake-valve lift. At the engine's 725-rpm idle, the intake, compression, power, and exhaust strokes, together, happen in just 0.2 second, literally the blink of an eye. The events that define that combustion, such as how long the valves remain open, occur over even smaller fractions of a second. And as the engine approaches its 7000-rpm climax, the entire process is compressed into a window that lasts roughly one-tenth as long as it does at idle.

To give you an idea of just how quickly today's engines move, here's a glimpse into the N55's operating strategy:

INTAKE-VALVE TIMING: The BMW inline-six's intake-camshaft phaser can shift the cam profile by up to 70 degrees, but the opening duration of 255 degrees is fixed. The dwell translates to a total opening of 0.006 second for a single intake stroke at 7000 rpm.

N55 Valve-Timing Adjustability



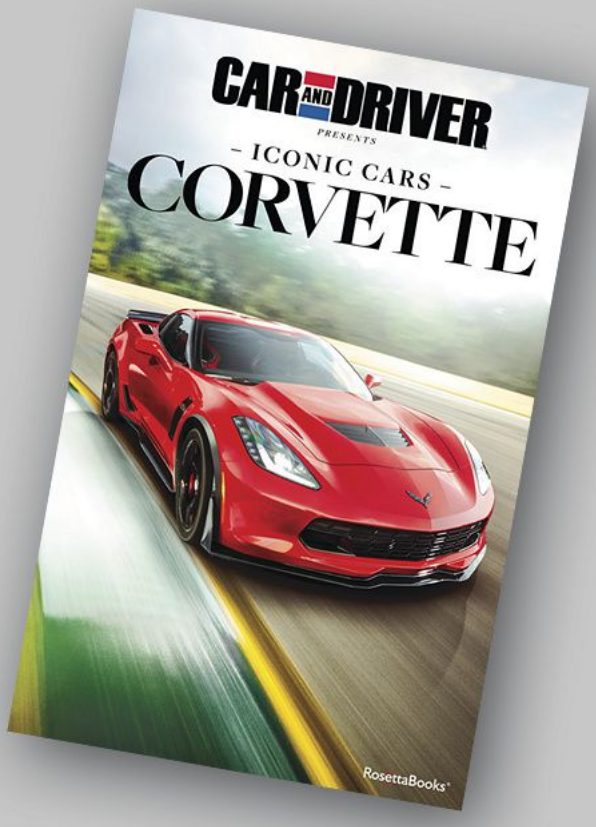
INTAKE-VALVE LIFT: BMW's Valvetronic system effectively plays the role of a throttle, metering air into the cylinders primarily as a function of accelerator-pedal position. It can adjust intake-valve lift between 0.008 inch—equal to the thickness of four pages of the magazine you're holding—at low loads and 0.4 inch for full load via a fast-acting DC motor that controls how the cam-roller followers pivot.

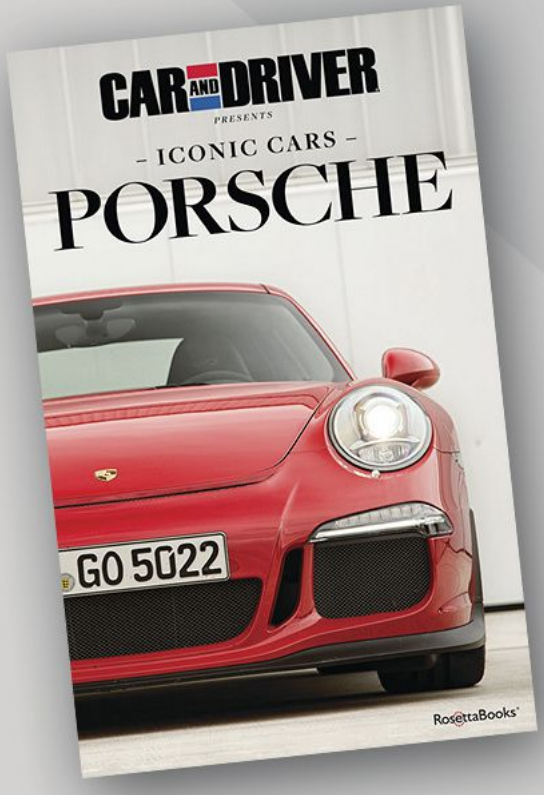
EXHAUST-VALVE TIMING: By controlling the camshaft timing independently, the engine controller can adjust the amount of overlap—the period when both the exhaust and intake valves are open. At low-load, steady-speed cruising, this overlap is increased to allow a portion of the inert exhaust gas to flow back into the cylinder during the intake stroke, reducing combustion temperatures and the formation of oxides of nitrogen. At a steady 50 mph with the engine turning at 1500 rpm, the N55's maximum overlap lasts 0.2 second. For maximum power at redline, fully minimized valve overlap lasts just 0.0005 second—the amount of time it takes sound to travel just seven inches at room temperature.

IGNITION TIMING: Ignition timing generally advances during light-load operation to prevent lean air-fuel mixtures from knocking. During both idle and redline runs in the N55, spark occurs around six to eight degrees before the piston reaches top dead center, but the gulf in engine speeds is the difference between spark occurring 0.002 second and 0.0002 second before the piston peaks. That's 10 and 100 times faster than the single flap of a hummingbird's wings. The system will also retard ignition timing when the engine is cold, working in conjunction with late fuel injection and earlier exhaust-valve opening to bring the catalytic converters to operating temperature more quickly.

illustration by CHRIS PHILPOT

Two stunning retrospectives celebrating the past and present of these iconic cars.





Featuring sensational photography throughout.

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CAR AND DRIVER

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Electric race cars sound like a guy sharpening a dull switchblade in an automatic knife sharpener while riding a high-speed escalator. It is not a sound you ever want to hear from a complex mechanical device. But I'm getting over it, especially as

I watch more Formula E races. At *C/D*, we seem divided on the series's relevance, but the organizers have acquired a stellar roster of drivers whose ambition and malevolence make for excellent post-race fistfights.

While watching Formula E last year, however, it dawned on me that someone is going to propose autonomous race cars. And guess what? Say hello to Robocar, a 724-hp autonomous racer with a 62-kWh battery pack, built by a London company called Roborace. Its goal is to organize the world's first driverless racing series. To that end, it has apparently latched on to strong funding and is going about this project correctly, starting not with the George Jetson–looking Robocar but with two cut-down Le Mans prototypes equipped with all the necessary autonomous sensors. Then it tested the cars the world over.

More recently, Roborace staged a "grudge match" between its two prototypes—or DevBots, as it calls them—on the Buenos Aires street course. With each lap, the cars better "learned" the track and thus upped their velocities, reportedly to 115 mph. One DevBot swerved to avoid a dog during the event. Alas, toward the race's end, a DevBot proved that even artificial intelligence can underestimate understeer, as it clouted the wall in a veritable Mardi Gras of carbon-fiber shrapnel, flailing suspension pieces, and a right-front wheel that continued on its own—as if looking for a sentient driver it could hire. At which point the Roborace engineers boasted that DevBot No. 1 had completed the requisite 20 laps and that even the crashed car was a success because "no drivers were harmed." Plus, one dog's tail was still wagging. On the other hand, auto racing isn't so dangerous anymore. The *Charlotte Observer* reported 520 racing deaths, including 47 spectators, in the last 25 years, none alcohol or texting related. In the same spell, fatalities on public roads amounted to 981,200. Yes, I know, the public was driving many more miles annually, but you see my point.

NO DRIVERS IN THE DEVBOTS. NO FANS APPARENTLY WATCHING, EITHER.

Anyway, the crux here is whether the planet's motorsports fans will embrace a driverless car parked in a winner's circle where champagne is sprayed over AI programmers wearing Rick Perry glasses. I'd wager that half the fascination of automobile racing has always been invested in the eccentric human behind the wheel. Apart from Ferrari fans, most Formula 1 enthusiasts root for specific drivers, not the car's mechanical recipe. In NASCAR and IndyCar racing, I'm not sure that *anyone* cares or knows who makes the chassis or engines.

But without drivers, what's left? I wonder if we'd soon ache for the likes of F1 champ James Hunt frolicking with the race queen 10 minutes before he climbs into his car. And let's not forget that there are feats a driverless race car will *not* perform that humans will. Take, for instance, the Busch brothers ramming competitors to exact revenge. At Monaco in the final seconds of qualifying, will a driverless car stage a faux crash to keep its best lap safe from attack? Will DevBots steer themselves 12 feet off the track and into the dirt to make a last-lap pass, as Alex Zanardi did at Mazda Raceway Laguna Seca? After the race, will a driverless car stop at the flag stand, stick out a mechanical arm, and grab the checkered flag to wave during a reverse-direction celebratory lap? In the press booth, will the victorious programmer say, "I just want to thank our AI platform for handling 24 trillion operations per second" and then Skype with the 15-year-old crew chief, Timmy, who's in his mother's basement in Toledo?

Then there's this: Olympic bobsled racing is dangerous. Shouldn't we construct autonomous bobsleds? Skiing breaks a zillion legs annually. Why not just fit skis with lidar and ultrasonic sensors and let them hurtle down the mountain by themselves? Why suffer road rash at the Tour de France when an autonomous bike will navigate better than you? Hell, I once got badly pinched in a vicious shopping-cart collision in a Kroger. Can't I get a cart that drives itself to collect a box of Trix and then meets me at my car?

In no way am I damning this exercise. For one thing, like CRISPR genetic experimentation, it's going to happen. No matter what, not too far in the future, a standard race in which 33 cars burn fuel at obscene rates and befoul the immediate atmosphere with tire smoke and arrogant levels of noise . . . well, it won't be politically correct. And trust me, that *is* the future, a future that may or may not have both feet in the end zone. I might be ashes in an urn by then. If not, I know people who can arrange it.

John Phillips

Esquire

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Left to Right: Onyx Ring in Sterling Silver $475, Ridged Cuff Bracelet in Sterling Silver $650, Red Tiger's Eye Beaded Bracelet $400, Brown Woven Leather Bracelet $175.

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Walter Owen Bentley—he preferred W.O. because he never liked the name Walter—was born in 1888, the year that Jack the Ripper rose to gory fame. Bentley's family had done well in "the trades," as the landed gentry

around Mayfair would have sniffed, and W.O. became an engineer in love with all things self-propelled. He worked on railroads and rode 3-hp motorcycles, and in 1912 became the U.K. dealer for Doriot, Flandrin, et Parant, a soon-to-be-dead French car that had electric start, hot stuff in the day.

After spending the Great War designing aircraft engines, he founded Bentley Motors in a nation racked by shortages and with much of its youthful manhood lying in shallow graves in the Somme. "To design and build a new motor car in 1919 without substantial capital," he said later, "was like being cast on to a desert island with a penknife and orders to build a house." Indeed, the ride lasted just 12 years, until W.O.'s archnemesis, Rolls-Royce, swooped in to snatch up the insolvent company.

It's that early, rollicking period of independence—so richly punctuated by the colossal green carriages that Ettore Bugatti dismissed as "fast trucks," by the fabled exploits of Captain Woolf Barnato and his Bentley Boys, by the Brooklands "Double Twelve" meet and the new 24-hour endurance contest at Le Mans that the fast trucks would win five times—that my pal Craig Ekberg wanted to celebrate when he and some friends launched the substantial task of organizing an 800-mile, five-day tour of inland California.

ANCIENT BENTLEYS ON THE RUN, OFTEN CALLED "BLOWERS," BUT FEW ACTUALLY WERE. W.O. DESPISED SUPERCHARGING.

The tour was exclusively for "W.O.s," as the 3034 cars from the original Cricklewood factory are called, and it was not your typical club rally. Of the 20 cars entered, the newest one was 86 years old, and they ranged in value from around $1.2 million to about $2.5 million. With an owner demographic accustomed to a certain style of travel, Craig and his cohorts planned a five-star movable pageant with epicurean accommodations and lavish smorgasbords, topping it off with a private air show on the final day. Contemporary, VW-owned Bentley even supplied some new Bentaygas.

I went to Palm Springs, east of L.A., to join up for the last two days. There had been early casualties—a holed radiator, a leaky water jacket—and heroic repair efforts made, W.O. owners apparently willing to do (or have their guy do) just about anything to keep their rigs rolling. Through the vigorous conniving that is sometimes necessary in this job, I worked myself behind the wheel of a 1931 4-liter roadster fitted with an 8.0-liter engine and belonging to Kurt Furger, a jovial Swiss pharma exec now retired to Colorado.

People used to ask me why I owned a World War II Dodge ambulance. Now I can say that it was to prepare me to drive Furger's Bentley. After advancing the throttle and retarding the spark with steering-wheel levers to get the six inline coffee cans moving, you strain to twist the satellite dish of a steering wheel in the general desired direction and you hope for the best. The four-speed crash-box with its short, stout shifter hard against your right calf wants a swift but also a sympathetic movement that can sense whether the dog clutches might clash or bite cleanly. You always leave miles of trailing distance, your right hand ready to spring for the outside handbrake that assists the pedal brake. Yank it with a firm pull, as it supplies most of the frighteningly modest braking ability at your command. A W.O. driver cannot afford to be surprised by anything.

Driving Furger's Bentley is the closest thing I've encountered to being in a wingless biplane, the wind coursing around the small Brooklands windscreens and flattening your face as the 8.0-liter blats along at its comfortable 2000-rpm cruising speed. People love these cars because they take every last ounce of concentration to drive; feel like Blenheim Palace on wheels; and transform you into old Barnato humping it for London, trying to beat the Blue Train back from Cannes to win a bet.

One Keston Pelmore, gentleman, started the Bentley Drivers' Club and wrote of the first meeting in 1936, "On the date concerned there was excellent attendance of no less than twenty-six people." You can't make this stuff up, which is precisely the point: We can argue about whether money buys happiness, but no amount of gold buys a history. If Hyundai-Kia and all the Chinese newcomers could buy a century of heritage with which to market their cars, they would cut a blank check. But thanks to W.O. and Woolf and the Bentley Boys, both the originals and the ones flogging their ancient cars in the desert, it's baked into every one of those winged Bs.

Aaron Robinson

THE 2017 PRIUS

STIRS THE SENSES, NOT THE WIND.

When designing the Prius, the purpose was clear: Build a hybrid that captivates the eye without capturing the wind. One that incorporates a drag-reducing active grille shutter, a built-in spoiler, a lowered hood and aerodynamics to produce a quieter cabin, a more confident drive and a .24 drag coefficient. The Prius not only transforms how efficiency can look, but also how it should feel.

TOYOTA | Let's Go Places

Options shown. ©2017 Toyota Motor Sales, U.S.A., Inc.

I'm in a cab in Los Angeles, making an early-morning run to LAX, when a McLaren 570S trundles across the intersection ahead of us. My eyes track it, taking it in, and I notice that the cabby's do, too. "I know about an old McLaren race

car in Peru," he says, and from then on I know we'll be friends.

Over the six or so miles to the airport, I learn that the driver, Juan, is a former SCCA racer who now owns a cherry C4 Corvette. Furthermore, according to Juan, he imported an original Cobra from Peru in the late 1970s or early '80s. "I paid $500 for it in Peru," he says. "It was dirty, an old race car." I ask him whether it was a 289. "No," he replies. "It was a 427." He later sold it in L.A. for, he says, $80,000. Now, Juan seems a little loosey-goosey with his numbers. Showing me a photo of his Vette, he says it was an '84 until I point out the square taillights and he agrees that it was a '94—but if the basic substance of the Cobra story holds up, then that would be high on the all-time list of used-car success stories.

When I get home, I do some sleuthing and find that there was in fact a Cobra imported from Peru to L.A. in the '80s. And it is indeed a 427. The car is now owned by Lynn Park, a California Cobra collector. I get him on the phone and recount Juan's story, which doesn't precisely jibe with the records of the car. Could anyone have ever really bought a Cobra for $500? "It's certainly possible," Park says. "I know of a few that bottomed out around $2000 in the '70s. So in Peru, who knows? But that would make it the cheapest I've ever heard of." Juan, for his part, doesn't regret the sale. "That was like a million bucks back then," he tells me.

THIS FIRST-GENERATION BRONCO IS JUST ONE OF THE MANY KILLER USED-CAR DEALS DYER MANAGED TO KILL.

Juan's story—the thrilling possibility of buying low and scoring a windfall—is why I've banned myself from browsing for cars. Even before I had a driver's license, I'd buy *Auto Hunter* and circle all the cars I thought were bargains. That was harmless fun, but when you're a grown-up (as, I guess, I am), fantasy car shopping runs headlong into reality. And the reality is that, whatever your budget, you could actually buy some of these cars. You could make it happen if you really wanted to. And that dynamic causes perpetual torment. Because what are the options? Either you act on your impulses and end up with no money and acres of weird cars, or you suffer automotive FOMO, wondering what might've been with that 396 Chevelle.

Oh, the Chevelle—the impetus for my self-imposed Craigslist ban. There were no photos with the ad and very little detail, but here's the gist: 1970 Chevrolet Chevelle SS 396 four-speed, $9900. It sounded like a scam, but I responded anyway. The guy then sent a few photos of a dusty car, blue with white racing stripes, looking pretty mint beneath the grime. Still unconvinced, I got him on the phone. The seller was the brother-in-law of the owner, who'd recently died. The owner had no wife or kids, so it was up to the brother-in-law to deal with the Chevelle, which was challenging since he lived in Wisconsin and the car was locked in a shed in North Carolina. So the in-law was flying in for the weekend and priced the car to get rid of it while he was in town. He admitted that it had been in storage for two years and he didn't know if it even ran. But he said the late owner had loved the car and owned it since 1972, so he thought it was in pretty good shape. Now, I'm from Boston, so I'm unfriendly and suspicious of everyone, but this guy on the phone sounded completely legit. So I told him to take down the ad immediately and I'd buy the car sight unseen.

Just kidding. I waffled for a day or two and then it was gone, which is what always happens. Last year, a friend told me that his neighbor was selling his 1976 Ford Bronco for five grand. He sent me a photo of a completely clean, uncut truck. I emailed the owner the next day to tell him I wanted it. He wrote back: "Yesterday I figured I'd aim high and put it on Craigslist for $6500. It sold that night. I guess I could've asked for more." In a fit of self-flagellation, I sent the photo of the truck to a guy who knows a few things about Broncos, Jonathan Ward of ICON. "If you had bought that for $6500," he said, "you could've sold it the next day and paid for a nice vacation." Once again, I wish I hadn't known that. Even without Craigslist, lucrative cars find a way to torture me.

When I parted ways with Juan at the airport, he was standing outside the car, looking lost in thought. I'm sure he was thinking about the Cobra, maybe about how much money it's worth now. Or maybe he was thinking about that McLaren race car that might be sitting down in Peru, just waiting for an offer.

Ezra Dyer

PHOTOGRAPH BY DOYLE

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Re volu-

tionary war

Downsizing and turbocharging signal a break with the **2017 Honda Civic Si**'s past—but only a partial one.

_by Jared Gall

_photography by Greg Pajo

Revolutions per minute are suffering a low birth rate. Granted, they're still something that we generally encounter by the thousands, but their populations are slipping. The Civic Si is the latest to have its revs edged out by the auto industry's most invasive of species, the turbocharged psi. The naturally aspirated 2.4-liter inline-four in this car's predecessor wound to 7400 rpm, but the turbocharged 1.5-liter unit in the gen-10 model waves the white flag at 6600. For decades, the Civic Si has been defined by its engine, by the joy of the car rooted in the challenge and satisfaction of shuffling screaming rpm with a nice, tight manual transmission. Now, not long after the spot in the old Si where the high-rpm cam lobes would engage and your spine started to tingle, this new Si gives you three quick flashes of the shift lights and smacks you in the face with the fuel cutoff. So long and farewell, VTEC-shrieking Civic Si. But how's this new reality?

Damn good. The Si has always been an adept handler, and this generation, available as a coupe or a sedan, is the best ever.

The body shell is shared with the regular Civic, with no stiffening or reinforcing to be found, but such measures aren't necessary. The suspension does get a thorough rework for Si duty, however. Honda stiffened the springs and anti-roll bars, both bits by 7 percent in the front. The rear springs are 32 percent firmer, and the anti-roll bar has 26 percent more starch. Solid-rubber bushings replace the base Civic's fluid-filled pieces, and adaptive dampers bolt to more rigid mounts. The stiffened upper links in the multilink rear suspension are shared with the upcoming Civic Type R. The variable-ratio steering rack carries over, but gets a more powerful

motor and unique tuning. We pulled 0.97 g on the skidpad with the eyeball burner on these pages (Honda calls the color Energy Green), tying the likes of the BMW M3 and the Jaguar F-type.

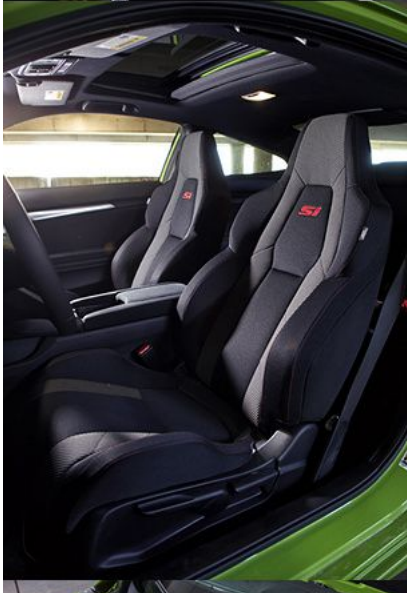
With enough tire and roll stiffness, though, you can make a shopping cart or the Oscar Mayer Weinermobile pull 0.97 g. The Si's trick is its remarkable compliance. This Honda is one of the best-riding cars to generate a skidpad figure like that. There's no harshness to anything but the most wicked of impacts. The wheel and body control are impeccable, and if you want, you can nearly pretend that the Si's primary objective is fast-paced civility.

We say "nearly" because the car is still fierce. The steering is extremely quick, with a 10.9:1 ratio at the ends of its travel, and also wonderfully weighty and communicative. And the brake pedal takes a predictable balance of travel and pressure to modulate. With rotors that are upsized 1.2 inches in front and 0.9 inch in back, the Si stops from 70 mph in 159 feet, dead even with the rest of its class. Our Si also produced an ungodly squealing, arriving at our office straight from a track event where it had been fitted with aftermarket brake pads. While the braking distance is unlikely to change on the stock pads, the original equipment would be less likely to generate its best stopping numbers on tries five and six.

The Si twitches into turns instantly with nigh-imperceptible roll, hunkering and sticking while the standard helical-gear limited-slip lets it grunt out of even the tightest bends under aggressive throttle. If the joy of the former Si was in keeping the engine on point with the chassis in a supporting role, this one flips that equation, the powertrain demanding less attention while it shuttles the leading-man chassis into and through each corner in pursuit of the next.

Push the sport button on the center console and the dampers firm up, the steering becomes so gloriously heavy that you might wish for a third arm, and the throttle response gets more immediate. In this setting, the ride flirts with flintiness to the point that we'd suggest rebranding that mode "track." Anywhere else, the baseline setting is a better compromise, pulled as tight as a tug-of-war rope.

It's been a long time since an Si used the same engine as the regular Civic. Well, most of it, anyway. Honda has reshaped the Si's pistons for better cooling and a slightly lower compression ratio, 10.3:1, down from 10.6 in the regular Civic. A larger, high-flow turbo steps up boost to 20.3 psi, an increase of 3.8. These changes net 205 horsepower and 192 pound-feet of torque, 31 more horsepower and 25 more pound-feet than the 1.5 can muster in a non-Si coupe or sedan. But those increases slip to 25 and 15, respectively, compared with the hatchback-only Civic Sport. Against the outgoing Civic Si, it's a gain of zero horsepower. Still, the 5700-rpm power peak arrives 1300-rpm earlier than in the old Si, and the torque crests 2300 rpm sooner, at 2100.



From top: Sensible interior in a car painted a silly color; silly and slow infotainment system; supportive seats; a heaping helping of squid-ink pasta.

While output lags considerably behind its competitors—the Ford Focus ST enjoys an additional 47 horsepower and 78 pound-feet—the Civic's comparatively svelte 2879 pounds allow it to keep pace in a straight line. Its zero-to-60 time of 6.3 seconds is just 0.2 second behind the best run we've coaxed from an ST, and the Si narrows that gap to a single tenth through the quarter-mile, at 14.8 seconds. Volkswagen's GTI is right on top of the Ford and Honda, while the launch advantage of its all-wheel-drive system puts the Subaru WRX way out ahead.

Its minute displacement means that Honda's turbocharged motor has one thing in common with the screamers that forged the Si's reputation: a dearth of torque at low rpm. Give it a couple of seconds to build boost and it'll recover, but you do not want to skip gears in the 2017 Si any more than you would in an older one. And even once the pinwheel wakes up, this generation's trade of the old high-rpm rip for anonymous turbo-four moan isn't one we'd have voted for. Know what else has a boosted 1.5-liter? The Chevrolet Malibu. The two don't sound as different as you might wish.

On the other hand, the EPA must be quite pleased with Honda's new engine. The last Civic Si managed all of 31 mpg on the highway cycle, with in-town consumption of just 22 mpg and a combined figure of 25. This new one picks up 6 mpg in the city cycle and 7 on the highway, for totals of 28 and 38, with a combined rating of 32.

[+] One of contemporary autodom's great front-drive chassis.
[–] The slow whittle of rpm; looks as if it should glow in the dark but somehow doesn't.
[=] A changed Si is not only undiminished but better than ever.

2017 HONDA CIVIC Si COUPE

PRICE

AS TESTED **$24,975**
BASE **$24,775**

VEHICLE TYPE: front-engine, front-wheel-drive, 5-passenger, 2-door coupe
OPTIONS: summer tires, $200
AUDIO SYSTEM: satellite radio, USB and Bluetooth-audio inputs, Android Auto and Apple CarPlay interfaces, 10 speakers

ENGINE

turbocharged and intercooled inline-4, aluminum block and head
BORE X STROKE ..... 2.87 x 3.52 in, 73.0 x 89.5 mm
DISPLACEMENT ..... 91 cu in, 1498 cc
COMPRESSION RATIO 10.3:1
FUEL DELIVERY SYSTEM: direct injection
TURBOCHARGER ..... MHI TD03
MAXIMUM BOOST PRESSURE ..... 20.3 psi
VALVE GEAR: double overhead cams, 4 valves per cylinder, variable intake- and exhaust-valve timing
REDLINE/FUEL CUTOFF ..... 6500/6600 rpm
POWER ..... **205 hp @ 5700 rpm**
TORQUE ..... **192 lb-ft @ 2100 rpm**

DRIVETRAIN

TRANSMISSION: 6-speed manual
FINAL-DRIVE RATIO ..... 4.11:1, helical limited-slip

GEAR	RATIO	MPH PER 1000 RPM	MAX SPEED IN GEAR (rpm)
❶	3.64	4.8	32 mph (6600)
❷	2.08	8.5	56 mph (6600)
❸	1.36	13.0	86 mph (6600)
❹	1.02	17.4	115 mph (6600)
❺	0.83	21.4	137 mph (6400)
❻	0.69	25.6	137 mph (5350)

CHASSIS

unit construction
BODY MATERIAL: steel stampings

STEERING

rack-and-pinion with variable ratio and variable electric power assist
RATIO 14.9–10.9:1
TURNS LOCK-TO-LOCK 2.1
TURNING CIRCLE CURB-TO-CURB ..... 37.8 ft

SUSPENSION

F: ind; strut located by a lower control arm; coil springs; 2-position electronically controlled dampers; anti-roll bar
R: ind; 1 trailing arm, 2 lateral links, and a toe-control link per side; coil springs; 2-position electronically controlled dampers; anti-roll bar

BRAKES

F: 12.3 x 1.0-in vented disc, 1-piston sliding caliper
R: 11.1 x 0.4-in disc, 1-piston sliding caliper
STABILITY CONTROL ..... partially defeatable

WHEELS AND TIRES

WHEEL SIZE ..... 8.0 x 18 in
WHEEL CONSTRUCTION ..... cast aluminum
TIRES: Goodyear Eagle F1 Asymmetric 2 235/40R-18 95Y

EXTERIOR DIMENSIONS

WHEELBASE ..... 106.3 in
LENGTH ..... 177.4 in
WIDTH ..... 70.8 in
HEIGHT ..... 54.7 in
FRONT TRACK ..... 60.5 in
REAR TRACK ..... 61.2 in
GROUND CLEARANCE ..... 5.1 in

INTERIOR DIMENSIONS

SAE VOLUME ..... **F:** 51 cu ft **R:** 38 cu ft
TRUNK ..... 12 cu ft

CAR AND DRIVER TEST RESULTS

ACCELERATION

ZERO TO	SECONDS
30 MPH	2.2
40 MPH	3.4
50 MPH	4.6
60 MPH	**6.3**
70 MPH	8.1
80 MPH	10.1
90 MPH	12.9
100 MPH	**15.9**
110 MPH	19.7
120 MPH	26.1
130 MPH	34.4
ROLLING START, 5–60 MPH	**7.4**
TOP GEAR, 30–50 MPH	12.6
TOP GEAR, 50–70 MPH	8.3
1/4-MILE	**14.8 sec @ 96 mph**
TOP SPEED	137 mph (gov ltd)

tested by MIKE SUTTON *in Chelsea, MI*

Maintaining 75 mph on a 200-mile highway loop, we saw 36, though, as with its predecessor, premium is recommended for the 2017 car. In 450 miles of mixed driving, we averaged 26 mpg.

But if the engine no longer feels special, the transmission picks up some of the slack. A six-speed manual is the only gearbox available in the Si, and it enjoys a revised linkage and fortified shifter mount for snappy, direct operation with just a little bit of shimmy through the gates. We're less pleased with the clutch, which suffers from excessive travel and minimal feel, imparting an overboosted sensation that makes it seem as if it were intended for an engine with a lot more than 192 pound-feet of torque.

Aside from its high-revving powerplant, the thing that always set the Civic Si apart in its class was its availability as a coupe. A two-door, as everybody knows, is the stylish choice in a world of dowdy sedans and frumpy hatchbacks. But it's hard to see any of the overwrought 10th-generation Civics as stylish choices unless you work in Hollywood and your job is casting vehicles for derelict wanderers of the wasteland in some dystopian future. In which case, you'd want to buff down the paint on this example, as the only thing so green in any self-respecting dystopia is the blood of the extraterrestrial race that is subjugating mankind.

Not that the color is the only garish aspect of the Si. It also brings a blacked-out grille and larger faux air intakes on the front fascia, with a more angular rear-bumper cover, a center-mounted exhaust outlet, and a big spoiler. Eighteen-inch wheels are the only choice, but buyers can opt for all-seasons or summer rubber in size 235/40R-18. (Our example, of course, was delivered with the sportier option, Goodyear Eagle F1 Asymmetric 2s.) It's a wild-looking thing, this Si, but it's hard to see people older than their 20s taking the look seriously.

Inside, Si buyers get fantastically supportive front seats with red stitching that carries over to the door trim, shift boot, and steering wheel. Aluminum pedals with rubber traction nubs are standard, as are some additional choices for the multi-function display in the instrument panel. There are, naturally, additional rev-counter lights, a boost gauge, and a lap timer, but the coolest displays are the friction circle and a screen that, like the telemetry during a racing broadcast, displays the throttle opening and brake pressure.

This being a Honda, the factory order sheet is pretty simple: You either get a Civic Si for $24,775, or you get a Civic Si with summer rubber for $24,975. The price is the same whether you opt for two doors or four. A number of dealer-installed knickknacks are available, but few people are likely to spend much more than $26,000 on an Si. That amount will get you into a Focus ST or a GTI, but that's where they start. With the high-revving engine gone, the Si will have to rely on value to set it apart. Well, that and its chassis, which does a fine job on its own. Rpm aren't readily replaceable with psi. But psi and lateral g? Now we're getting somewhere.

The Civic Si delivers tremendous roadholding, a shifter so good it could only have come from Honda, and, yep, the obligatory performance-car rear wing.

HANDLING
ROADHOLDING, 300-FT-DIA SKIDPAD ..... **0.97 g**
UNDERSTEER ..... MINIMAL

BRAKING, 70-TO-ZERO MPH
SHORTEST STOP ..... **159 ft**
LONGEST STOP ..... 163 ft
FADE RATING ..... NONE

WEIGHT
CURB ..... **2879 lb**
PER HORSEPOWER ..... 14.0 lb
DISTRIBUTION ..... **F:** 61.4% **R:** 38.6%
CENTER-OF-GRAVITY HEIGHT ..... 20.5 in
TOWING CAPACITY ..... 0 lb

FUEL
CAPACITY ..... 12.4 gal
OCTANE ..... 91 (recommended)
EPA COMBINED/CITY/HWY ..... 32/28/38 mpg
***C/D* OBSERVED** ..... **26 mpg**

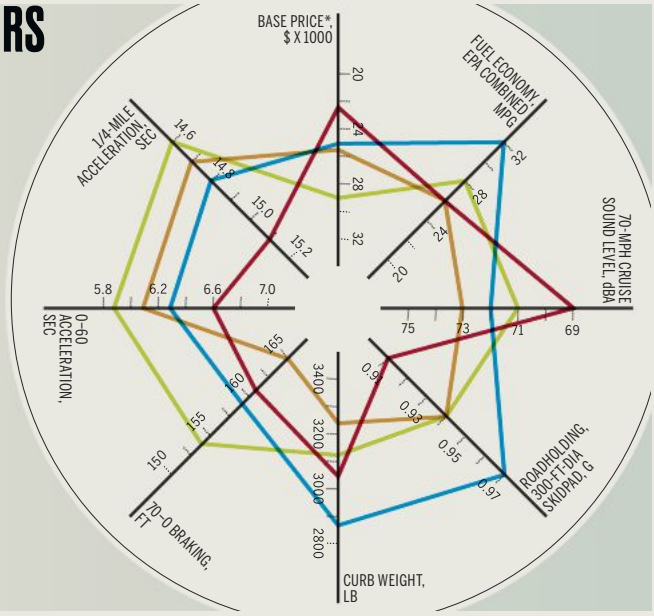
INTERIOR SOUND LEVEL
IDLE ..... 40 dBA
FULL THROTTLE ..... 84 dBA
70-MPH CRUISING ..... 72 dBA

COMPETITORS

The featherweight Civic Si displays chart-topping lateral stick. Its weight advantage isn't enough to overcome its power deficit, though.

HONDA CIVIC Si COUPE
1.5-L I-4, 6-SP MAN
FORD FOCUS ST
2.0-L I-4, 6-SP MAN
HYUNDAI ELANTRA SPORT
1.6-L I-4, 6-SP MAN
VOLKSWAGEN GTI
2.0-L I-4, 6-SP MAN

*Includes performance-enhancing options.



Shell V-Power NiTRO+ Premium Gasoline
The Official Fuel of CAR AND DRIVER

AT MIC PROSPE CTO

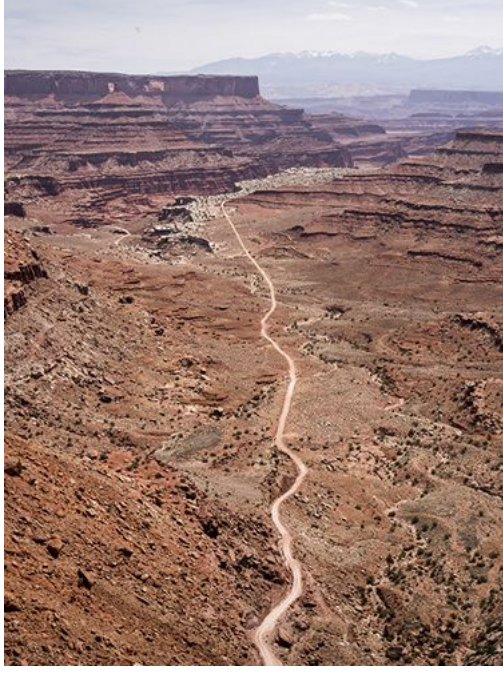
Chevrolet's roughneck Colorado ZR2 goes hunting for radioactive history. *by Aaron Robinson*

photography by James Lipman

2017 Chevrolet Colorado ZR2

R

People have always seen what they want to see in those splendid red-rock canyons and spires of eastern Utah. The ancient Anasazi saw a homeland carved by the hands of divine artisans, while Captain John Macomb, exploring the area in 1859 for the U.S. Army Corps of Topographical Engineers, reported back that "perhaps no portion of the earth's surface is more irredeemably sterile, more hopelessly lost to human habitation." For the writer Edward Abbey, "the red dust and the burnt cliffs and the lonely sky—all that which lies beyond the end of the roads," was, simply, "the most beautiful place on earth."



[+] On- and off-road agility, decent fuel economy, looks bad-ass. [–] No lighter than a full-size pickup, nor cheaper. [=] Chevy proves it can build a mean stratum smasher.

Cowger's station in Cisco, Utah (top left), now a ruin ruled by a friendly cat. Uranium rush produced many of the trails in Canyonlands National Park.

Charlie Steen saw money. Government greenbacks and a lot of them, buried in radioactive deposits somewhere under the layer of chocolate-colored Wingate sandstone that is the fossilized remains of Jurassic-age desert dunes. The lanky Texas geologist, who had spent his early years prospecting for oil in South America, just knew that uranium was hidden where nobody was looking, deep in the same kind of anticlinal or archlike formations that yielded oil. And in 1950, uranium was going to be the new oil, the Atomic Energy Commission paying out lavishly to those who helped mine a domestic supply.

Steen's hunch promised to make him an overnight millionaire. But first he had to find his seam of the soft greenish-yellow rock, the atomically buzzing carnotite ore that the local Ute and Navajo Indians had ground up for war paint. We thought the new Chevrolet Colorado ZR2, a dedicated off-roader conceived with Trophy Truck and quad-ATV styling cues and coming across as a Raptor Lite, would prove to be the right ride to trace Steen's 67-year-old trail through the Utah labyrinths. To make things more interesting, we procured a $47,730 four-door crew cab fitted with the available 2.8-liter inline-four Duramax turbo-diesel, believing the prodigious 369 pound-feet of torque combined with the 20-mpg EPA-rated average would produce the perfect uranium prospector. And we were right, with a few caveats.

By all accounts, Steen was an extrovert and a bit of a loudmouth. After talking his way out the door of his Texas oil-company job in 1950, he packed up his wife, Minnie Lee (she preferred M.L.), and their four boys and bolted for the Colorado Plateau, lured by a mining journal's report on uranium possibilities in the Four Corners area. He couldn't afford the essential uranium prospector's tool, a Geiger counter, so he placed his faith in his geology training and experience.

We picked up our Graphite Metallic ZR2 in Grand Junction, Colorado, and headed overland, west toward Utah. Besides its lockable front and rear differentials, the ZR2's headline upgrade is its exotic blue-and-gold Multimatic aluminum-bodied, remote-reservoir shocks. They use a spool-valve design—basically a cup with a spring-loaded plunger in it that uncovers purposefully shaped relief windows that permit the oil to pass. The deceptively simple design allows very precise bump and rebound tuning.

The 4975-pound truck, as heavy as it is, thus floats over washboards at 45 mph and sponges up the sudden jolts from the mini canyons cut into the trail by runoff. You can cover territory at speeds that would have stunned Steen as he rattled along in his dusty, dilapidated, third-hand Jeep, prowling the tablelands and slot canyons for geologic formations that spoke to him.

There was little money that first season of prospecting, so Steen set up the family in a rent-free squatter camp consisting of a small travel trailer and an eight-by-16-foot shack. Likewise, we noticed that the ZR2's interior has rather shallow door pockets and no great places to park camping clutter. It's the downside to buying a less-than-full-size pickup, perhaps, but the limited space could be used better. Situated at a jaunty angle on the $615 bed-mounted carrier, for example, the Baja-style spare looks tough but is a ridiculous waster of acreage. You can't load anything on the tire and only small items squeeze under or around it. Luckily the rack seems to

unbolt easily, though no fixtures are supplied underneath to hang the spare in its normal place.

After provisioning up in Moab, we headed to windy Yellow Cat Flat, damp and buggy from the spring runoff. Here, M.L. and the kids had spent the brisk winter of 1950-51 while Steen burned up the meager budget on drilling equipment and supplies. Our dust plume heading west from State Route 128, we skirted Arches National Park to the south and wove among the low, scrubby bluffs and crumbling cliffs of broken, rust-colored sandstone to a region nicknamed The Poison Strip. A few long-abandoned uranium shafts here were only recently sealed up and fenced off by Utah's Abandoned Mine Reclamation Program, which strives to keep paying tourists alive by not losing them to cave-ins and noxious gas.

The ZR2 is a handler both off-road and on, with tight steering and excellent body control. The big 31-inch Goodyear Wrangler DuraTrac knobbies make surprisingly little noise on pavement while proving to be bear claws in the dust, the sidewalls resistant to scraping from rock ledges. Compared with a standard Colorado, the ZR2's ride height is two inches higher and the track gets shoved out 3.5 inches, endowing the pickup with balletic stability on the slickrock and crumbled schist. A dial gives you the choice of rear-drive, auto all-wheel drive, permanent four-high, and four-low. Leave it in auto and you may never touch the control again, except maybe to engage the specific off-road throttle/transmission mode that makes it simpler to ease the ZR2 over obstacles.

Our tent pitched at Yellow Cat, a jeweled black blanket finally doused the long twilight, the Milky Way a glistening vapor stretching from horizon to horizon. You can imagine the four Steen boys scampering in the brush as M.L. puffed on one of her self-rolled Bull Durhams and her husband figured out how to pay for yet another broken coring drill. Out of cash, Steen reluctantly abandoned grubstaking to work as a carpenter in Tucson, Arizona, for a year, but the uranium called to him. Eventually he was able to scrape together enough to return to a promising spot in the Big Indian Wash on the western side of Lisbon Valley, about 30 miles south of Moab. Some uranium had been discovered in this shallow canyon, but it was low quality and the government considered the area a write-off.

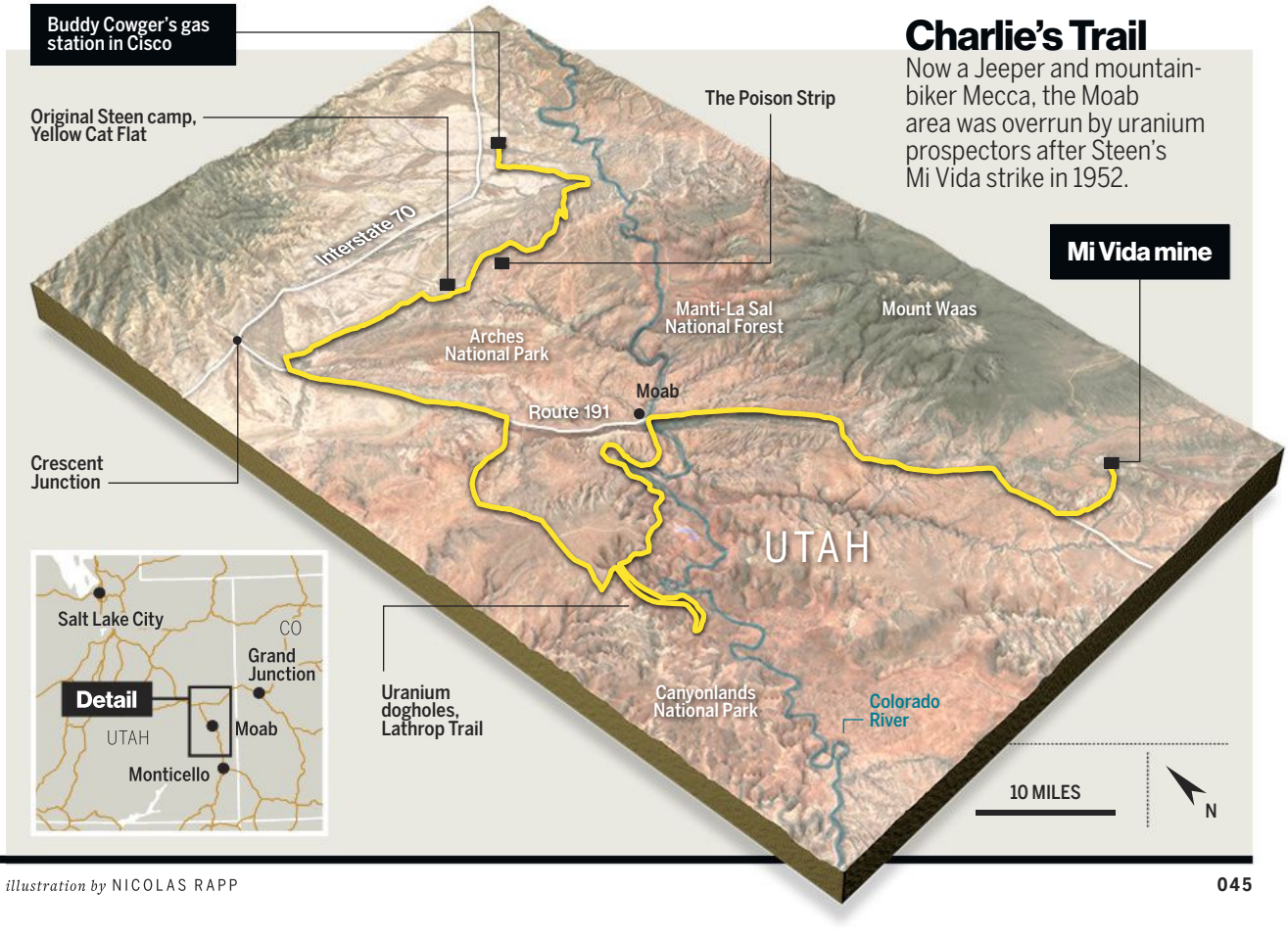


illustration by NICOLAS RAPP

Canyonland's White Rim Trail (top left) leads to some shallow uranium mines, or dogholes. Signs and fences try to keep people away, but old mine works are everywhere.

Standing on an opposite slope at Big Indian, Steen must have read the clearly visible layers of Wingate and chalky Chinle sediments like an archeologist reads an ancient text. The earth was whispering, and he gambled his remaining dimes on drilling core samples at a site he called "Mi Vida," or "My Life," a reference to his old prospecting days in South America. When the drill bit broke off yet again, Steen gathered his few samples and dejectedly started the 100-mile drive back to Cisco, Utah, where M.L. and the kids were set up in a tar-paper hovel renting for $15 a month.

At Buddy Cowger's gas station in Cisco, the proprietor offered to give Steen's samples a pass with his Geiger counter. When Cowger waved it over one of the black rocks, the needle pegged; Steen hadn't recognized the core as pitchblende, an even purer form of uraninite that early gold prospectors despised because it gummed up their equipment. He took off running toward the family shack, blindly knocking M.L.'s loaded clothesline into the dirt while whooping, "We've found it! It's a million-dollar lick!" It was July 1952. Steen was 32, and tiny Moab was about to be swamped with prospectors.

We bounced our way up Big Indian Wash, the ZR2's stiff frame soaking up the rocks that have tumbled downhill through the years and the massive potholes that have opened up in the largely forgot-

2017 CHEVROLET COLORADO ZR2 CREW CAB DIESEL

PRICE

AS TESTED **$47,730**
BASE **$46,120**

VEHICLE TYPE: front-engine, rear-/all-wheel-drive, 5-passenger, 4-door pickup
OPTIONS: in-bed spare-tire carrier, $615; Bose audio system, $500; navigation, $495
AUDIO SYSTEM: satellite radio; minijack, USB, and Bluetooth-audio inputs; Android Auto and Apple CarPlay interfaces; 7 speakers

ENGINE

turbocharged and intercooled diesel inline-4, iron block and aluminum head
BORE X STROKE ..... 3.70 x 3.94 in, 94.0 x 100.0 mm
DISPLACEMENT ..... 169 cu in, 2776 cc
COMPRESSION RATIO 16.5:1
FUEL DELIVERY SYSTEM: direct injection
TURBOCHARGER ..... Honeywell GTB1752VKL
MAXIMUM BOOST PRESSURE ..... 25.3 psi
VALVE GEAR: double overhead cams, 4 valves per cylinder
REDLINE/FUEL CUTOFF ..... none/4800 rpm
POWER ..... **181 hp @ 3400 rpm**
TORQUE ..... **369 lb-ft @ 2000 rpm**

DRIVETRAIN

TRANSMISSION: 6-speed automatic with manual shifting mode
FINAL-DRIVE RATIO 3.42:1
ALL-WHEEL-DRIVE SYSTEM: part-time 2-speed with automatic front-axle engagement, locking front and rear differentials
TRANSFER-GEAR RATIOS (LOW/HIGH) 2.62:1/1.00:1

GEAR	RATIO	MPH PER 1000 RPM (low/high)	MAX SPEED IN GEAR (rpm) (low/high)
1	4.07	2.4/6.3	12/30 mph (4800/4800)
2	2.37	4.1/10.8	20/52 mph (4800/4800)
3	1.55	6.3/16.6	30/80 mph (4800/4800)
4	1.16	8.5/22.2	41/98 mph (4800/4400)
5	0.85	11.5/30.1	55/98 mph (4800/3250)
6	0.67	14.5/38.1	70/98 mph (4800/2575)

CHASSIS

full-length frame
BODY MATERIAL: steel and aluminum stampings

STEERING

rack-and-pinion with variable electric power assist
RATIO 16.8:1
TURNS LOCK-TO-LOCK 2.8
TURNING CIRCLE CURB-TO-CURB ..... 44.0 ft

SUSPENSION

F: ind, unequal-length control arms, coil springs, anti-roll bar
R: rigid axle, leaf springs

BRAKES

F: 12.2 x 1.1-in vented disc, 4-piston fixed caliper
R: 12.8 x 0.7-in vented disc, 1-piston sliding caliper
STABILITY CONTROL ..... partially defeatable, traction off

WHEELS AND TIRES

WHEEL SIZE ..... 8.0 x 17 in
WHEEL CONSTRUCTION ..... cast aluminum
TIRES: Goodyear Wrangler DuraTrac 265/65R-17 112S M+S

EXTERIOR DIMENSIONS

WHEELBASE ..... 128.5 in
LENGTH ..... 212.4 in
WIDTH ..... 76.7 in
HEIGHT ..... 72.2 in
FRONT TRACK ..... 65.9 in
REAR TRACK ..... 65.9 in
GROUND CLEARANCE ..... 8.9 in
APPROACH ANGLE ..... 30.0 deg
DEPARTURE ANGLE ..... 23.5 deg
BREAKOVER ANGLE ..... 23.5 deg
FORDING DEPTH ..... 26.0 in

CARGO BOX DIMENSIONS

LENGTH ..... 61.7 in
MINIMUM WIDTH ..... 44.4 in
HEIGHT ..... 20.9 in
VOLUME ..... 41 cu ft

INTERIOR DIMENSIONS

SAE VOLUME ..... **F:** 62 cu ft **R:** 45 cu ft

CAR AND DRIVER TEST RESULTS

ACCELERATION

ZERO TO	SECONDS
30 MPH	2.8
40 MPH	4.5
50 MPH	6.4
60 MPH	**9.1**
70 MPH	12.2
80 MPH	16.9
90 MPH	23.2

tested by AARON ROBINSON *in Rosamond, CA*

ten Steens Road. The ZR2's quietly clattering diesel, $3500 more than the gas V-6, is a perfect tool for this work, the tugboat torque easily moving the truck's bulk up and over all that it encounters once the boost has built. It's only out on the highway that the 2.8-liter feels flat, the accelerator pedal needing to be pegged to make even a leisurely pass. Our VBOX verified the diesel's casual approach to speed, reporting times of 9.1 seconds to 60 mph and 16.9 seconds through the quarter-mile. But our 20-mpg fuel economy over high terrain and against strong headwinds offers some compensation.

Coming around a bend in Big Indian, we spotted a rectangular hole in the primordial-clay Chinle layer framed by aging timbers. A derelict electric train on rails snaked out of the darkness as if hauling another load to the ore hopper. We picked our way down to the weedy site on an even rougher track, finally finding a boulder the ZR2 couldn't subdue without scraping the protective rocker rails that are part of the package. Written in faded paint on the side of the train: UTEX EXPLORATION CO. It was the name Steen devised by merging the words Utah and Texas. We had found Mi Vida.

The "million-dollar lick" turned out to be a $130 million lick, the mine rocketing both Steen and Moab to international fame. Breathless news stories told of Steen's lavish new home on a hilltop overlooking the Moab, of his battered and holed boots that he had gilded in bronze ("To remind me, in case I forget, how 'easy' it is to earn a million bucks," he said), of the parties that he threw at the Moab airport with more than 8000 guests, of the plane he flew weekly to Salt Lake City for rhumba lessons.

Teachers, accountants, mechanics, and dreamers dropped everything and headed for Moab, hoping to become the next "uraniumaire" and swamping the tiny town. The April 1955 issue of *Motor Life* ran a six-page feature by future *Car and Driver* editor Griff Borgeson, titled "Uranium Prospecting in Your Car." Besides a Geiger counter, Borgeson recommended carrying binoculars, an axe, and a pistol.

Mining at Mi Vida lasted just 12 years, until atomic power lost its luster and the government declared it had enough uranium. Steen was bankrupt by 1968, having lost his fortune to bad investments and a long IRS battle. Others were cleaned out by uranium penny stock swindles and rampant speculation. The miners who died of radiation poisoning paid the heaviest price, however, and the desert was transformed from a pristine wilderness to an industrialized dump criss-crossed by thousands of miles of hastily bulldozed roads.

The Jeepers and mountain bikers have happily taken over where the ore trucks left off. Compared with all working trucks, the compact, expensive, and heavy ZR2 is a plaything, but it shrugged off everything we threw at it and took us where we wanted to go, back to those heady days in 1952 when a guy who saw what others didn't in those canyons could dig a fortune right out of the rock.

ROLLING START, 5–60 MPH	**10.0**
TOP GEAR, 30–50 MPH	4.6
TOP GEAR, 50–70 MPH	7.3
1/4-MILE	**16.9 sec @ 80 mph**
TOP SPEED	98 mph (gov ltd)

HANDLING

ROADHOLDING, 200-FT-DIA SKIDPAD	**0.68 g***
UNDERSTEER	MODERATE

BRAKING, 70-TO-ZERO MPH

SHORTEST STOP	**197 ft**
LONGEST STOP	228 ft
FADE RATING	Heavy

WEIGHT

CURB	**4975 lb**
PER HORSEPOWER	27.5 lb
DISTRIBUTION	**F:** 58.0% **R:** 42.0%
TOWING CAPACITY	5000 lb

FUEL

CAPACITY	21.0 gal
EPA COMBINED/CITY/HWY	20/19/22 mpg
***C/D* OBSERVED**	**20 mpg**

INTERIOR SOUND LEVEL

IDLE	45 dBA
FULL THROTTLE	69 dBA
70-MPH CRUISING	68 dBA

**Stability-control inhibited.*

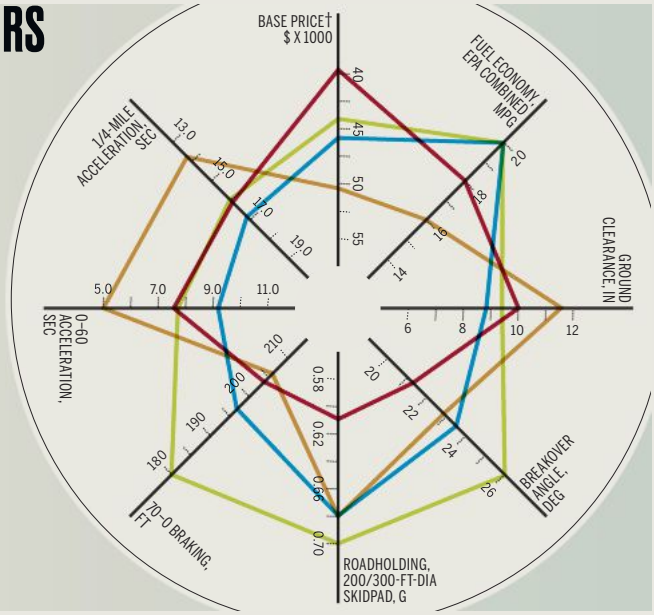
Shell V-Power NiTRO+ Premium Gasoline
The Official Fuel of CAR AND DRIVER

COMPETITORS

Off-roaders take many forms. The diesel Colorado ZR2 is a high-speed desert runner that accelerates slowly.

— **CHEVROLET COLORADO ZR2 CREW CAB DIESEL** 2.8-L I-4, 6-SP AUTO
FORD F-150 RAPTOR SUPERCAB 3.5-L V-6, 10-SP AUTO
JEEP WRANGLER UNLIMITED RUBICON 3.6-L V-6, 5-SP AUTO
TOYOTA TACOMA TRD PRO DOUBLE CAB 3.5-L V-6, 6-SP AUTO

†Includes performance-enhancing options.



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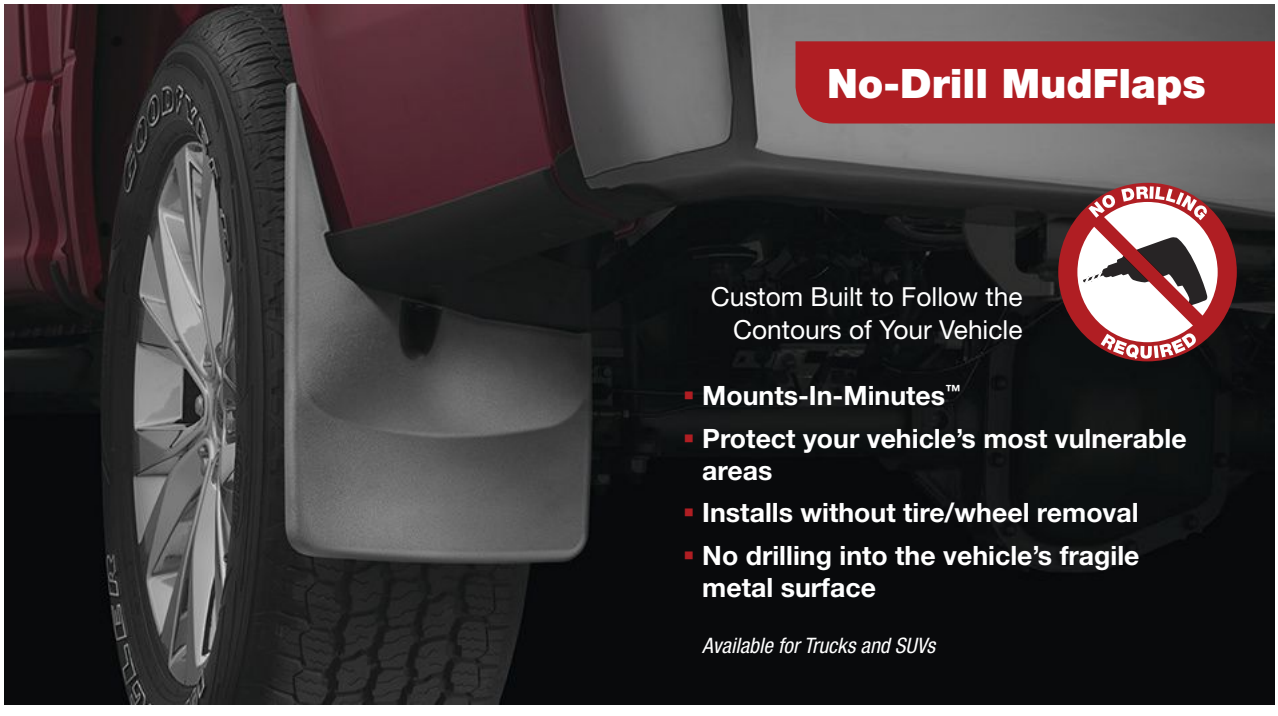
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On our summer vacation, we took a bunch of new three-row SUVs to camp. You guys want to see the slideshow?

We drive through forests of fake wood and fields of black plastic to find the best minivan alternative.
_by Jeff Sabatini _photography by Roy Ritchie

No, you're not going to buy a minivan. We get that. You're aware of the minivan's superior packaging and value proposition vis-à-vis any three-row crossover. You'd totally drive a minivan (you're not one of those people whose ego is so precious that you'd be embarrassed to be seen behind the wheel of an Odyssey), but you truly need one of these jacked-up wagons wrapped in cladding like so much bacon around a sirloin. Because, as we understand it, you have children to take to summer camp.

Not band camp or sports camp, and heavens no, not space camp, but the real outdoorsy kind, out in the country on a lake with canoes and archery and mosquitoes bigger than the horses. Sure you do. Kind of like the guy who drives a pickup because he has to make that annual trip to the garden center to load up a bed full of mulch. But we'll play along, which is why we booked five all-wheel-drive family trucksters for our own trip to YMCA Camp Al-Gon-Quian in northern Michigan.

Durango

18 90 d

CX-9

Pilot

18 90 8

Atlas

18 90 81

8 1 06 81

Acadia

The last time we surveyed three-row people haulers was way back in 2011, when this segment was still burgeoning. Six years later, it has fully burgeoned—indeed, well beyond its original appeal to families outgrowing sedans and other traditional five-seaters. Today, even hipster parents who dress their onlies in vintage concert T-shirt replicas are entering the three-row crossover market, because Pink Floyd kid has friends.

Choosing our roster seemed difficult at first, as there are now more than a dozen competitors in the segment. Clearly, we had to invite back our 2011 winner, as the Dodge Durango is still on the market and, in fact, relatively unchanged. Sharing its underpinnings with the Jeep Grand Cherokee, the Dodge is unlike the rest of this field in that its 3.6-liter V-6 is mounted longitudinally and sends the majority of its torque to the rear wheels. The atavistic Durango can be configured with two rows of seats, but, of course, we opted for three, with second-row captain's chairs swapped for the bench, reducing maximum seating from seven to six. In GT trim, our Durango carried an as-tested price of $49,065.

The 2017 GMC Acadia is in its first model year of a ground-up reengineering, and the long-awaited 2018 Volkswagen Atlas is brand new, so these also made the cut. A pair of corporate V-6s that match the Durango's 3.6 liters provide motivation, although the GMC and

MAZDA CX-9 SIGNATURE AWD
Price: $45,855 • Power: 250 hp
Torque: 310 lb-ft • Weight: 4342 lb
C/D observed: 21 mpg

GMC ACADIA DENALI AWD
Price: $51,785 • Power: 310 hp
Torque: 271 lb-ft • Weight: 4391 lb
C/D observed: 20 mpg

VOLKSWAGEN ATLAS SEL PREMIUM 4MOTION
Price: $49,415 • Power: 276 hp
Torque: 266 lb-ft • Weight: 4728 lb
C/D observed: 20 mpg

DODGE DURANGO GT AWD
Price: $49,065 • Power: 295 hp
Torque: 260 lb-ft • Weight: 5131 lb
C/D observed: 16 mpg

HONDA PILOT ELITE AWD
Price: $48,160 • Power: 280 hp
Torque: 262 lb-ft • Weight: 4300 lb
C/D observed: 19 mpg

VW can also be had with four cylinders and, like the rest of the SUVs here save for the Dodge, front-drive models are available. The new Acadia has been downsized from the jumbo first-generation model that GM has been selling since 2006. Like the Dodge, it can be had with five, six, or seven seats. Also like the Dodge, ours was a six-seater with second-row captain's chairs. We tested a loaded Acadia Denali with a $51,785 price tag. The Atlas finally gives VW a player in this segment and is available exclusively as a seven-seater. Our top-trim SEL Premium model stickered at $49,415.

We also picked the Honda Pilot and Mazda CX-9. This familiar pair saw redesigns for the 2016 model year, making them the next-freshest things coming out of the dining-hall kitchen. Honda's ubiquitous 3.5-liter V-6 powers the Pilot, which is the only vehicle in this class offering minivan-esque eight-passenger seating. Our Elite-trimmed tester accommodated only seven, in a two-two-three configuration, and cost $48,160. Mazda is the sole carmaker thinking outside the box when it comes to two-box three-row propulsion, using a 2.5-liter turbocharged inline-four as its only engine. Our seven-passenger CX-9 Signature carried a $45,855 MSRP.

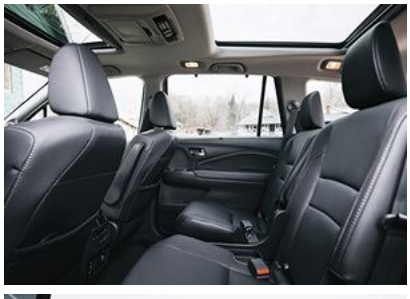
Since this was not a kickball game, we told the rest of the three-row crossover market to get lost and hit the road. After a 200-mile freeway cruise, we sought out twisting country roads to measure handling and later we even subjected these soft-roaders to authentic two-tracks, or rutted dirt paths with weeds growing up in the center and the occasional angry branch intruding into the lane. Truth be told, we did nothing with these vehicles that you couldn't accomplish similarly in a Camry, provided you don't mind stuffing the neighbors' kids in the trunk.

Honda Pilot [+] Good packaging, easy access to third row, loaded with features. [–] Sloppy ride, weak brakes, infotainment system needs more (some!) buttons. [=] A minivan without the sliding rear doors.

5. Honda Pilot

The Pilot was the bed-wetter in our cabin, earning our scorn and its last-place finish when its brakes started smoking after a few runs up and down our twisty road. This was the only mechanical hiccup we encountered from any of our campers, but it was not the only complaint we had with this vehicle.

Its nine-speed transmission and herky-jerky adaptive cruise control give the Pilot a spastic freeway ride, and the slightest bit of



Below: The Pilot's infotainment system and shifter were ergonomic misses. One had too few buttons; the other had too many. Right: If your priority is second- and third-row space, the Pilot is not a bad choice.

	2017 DODGE DURANGO GT AWD	2017 GMC ACADIA DENALI AWD	2017 HONDA PILOT ELITE AWD	2017 MAZDA CX-9 SIGNATURE AWD	2018 VOLKSWAGEN ATLAS SEL PREMIUM 4MOTION
PRICE AS TESTED	**$49,065**	**$51,785**	**$48,160**	**$45,855**	**$49,415**
BASE PRICE	**$41,190**	$48,390	$48,160	$45,255	$49,415
DIMENSIONS					
LENGTH	201.2 in	193.6 in	194.5 in	199.4 in	198.3 in
WIDTH	75.7 in	75.4 in	78.6 in	77.5 in	78.3 in
HEIGHT	70.9 in	66.0 in	70.4 in	67.6 in	70.0 in
WHEELBASE	119.8 in	112.5 in	111.0 in	115.3 in	117.3 in
FRONT TRACK	63.9 in	64.5 in	66.3 in	65.3 in	67.2 in
REAR TRACK	64.1 in	64.5 in	66.3 in	65.2 in	67.8 in
INTERIOR VOLUME	**F:** 54 cu ft **M:** 44 cu ft **R:** 34 cu ft	**F:** 54 cu ft **M:** 52 cu ft **R:** 34 cu ft	**F:** 58 cu ft **M: 56 cu ft** **R:** 38 cu ft	**F:** 55 cu ft **M:** 51 cu ft **R:** 30 cu ft	**F: 61 cu ft M:** 53 cu ft **R: 39 cu ft**
CARGO BEHIND	**F:** 85 cu ft **M:** 48 cu ft **R:** 17 cu ft	**F:** 79 cu ft **M:** 42 cu ft **R:** 13 cu ft	**F:** 82 cu ft **M:** 46 cu ft **R:** 16 cu ft	**F:** 71 cu ft **M:** 38 cu ft **R:** 14 cu ft	**F: 97 cu ft M: 56 cu ft** **R: 21 cu ft**
TOWING					
MAX	**6200 lb**	4000 lb	5000 lb	3500 lb	5000 lb
AS TESTED	**6200 lb**	4000 lb	0 lb	0 lb	0 lb
POWERTRAIN					
ENGINE	DOHC 24-valve V-6 220 cu in (3605 cc)	DOHC 24-valve V-6 223 cu in (3649 cc)	SOHC 24-valve V-6 212 cu in (3471 cc)	turbocharged DOHC 16-valve inline-4 152 cu in (2488 cc)	DOHC 24-valve V-6 220 cu in (3598 cc)
POWER HP @ RPM	295 @ 6400	**310** @ 6600	280 @ 6000	250 @ 5000	276 @ 6200
TORQUE LB-FT @ RPM	260 @ 4000	271 @ 5000	262 @ 4700	**310** @ 2000	266 @ 2750
REDLINE/FUEL CUTOFF	6500/6600 rpm	none/7000 rpm	6800/6500 rpm	6700/6000 rpm	6500/6400 rpm
LB PER HP	17.4	**14.2**	15.4	17.4	17.1
DRIVELINE					
TRANSMISSION	8-speed automatic	6-speed automatic	9-speed automatic	6-speed automatic	8-speed automatic
DRIVEN WHEELS	all	front/all	all	all	all
GEAR RATIO:1/ MPH PER 1000 RPM/ MAX MPH	❶ 4.71/5.5/36 ❷ 3.14/8.2/54 ❸ 2.11/12.4/82 ❹ 1.67/15.6/103 ❺ 1.29/20.4/117 ❻ 1.00/25.0/117 ❼ 0.84/31.0/117 ❽ 0.67/36.0/110	❶ 4.48/6.3/44 ❷ 2.87/9.7/68 ❸ 1.84/13.9/97 ❹ 1.41/18.1/127 ❺ 1.00/26.3/131 ❻ 0.74/37.5/125	❶ 4.71/4.3/28 ❷ 2.84/7.1/46 ❸ 1.91/10.0/65 ❹ 1.38/14.5/89 ❺ 1.00/16.7/113 ❻ 0.81/24.4/113 ❼ 0.70/28.3/113 ❽ 0.58/34.0/110 ❾ 0.48/39.2/105	❶ 3.49/5.6/35 ❷ 1.99/9.8/62 ❸ 1.45/13.5/84 ❹ 1.00/19.6/122 ❺ 0.71/27.6/132 ❻ 0.60/32.7/132	❶ 5.59/4.3/28 ❷ 3.14/7.7/49 ❸ 1.95/12.4/79 ❹ 1.43/16.8/108 ❺ 1.21/19.9/116 ❻ 1.00/24.1/116 ❼ 0.81/29.7/110 ❽ 0.67/35.9/105
FINAL-DRIVE RATIO:1	3.45	3.87	4.33	4.41	3.60
CHASSIS					
SUSPENSION	**F:** control arms, coil springs, anti-roll bar **R:** multilink, coil springs, anti-roll bar	**F:** struts, coil springs, anti-roll bar **R:** multilink, coil springs, anti-roll bar	**F:** struts, coil springs, anti-roll bar **R:** multilink, coil springs, anti-roll bar	**F:** struts, coil springs, anti-roll bar **R:** multilink, coil springs, anti-roll bar	**F:** struts, coil springs, anti-roll bar **R:** multilink, coil springs, anti-roll bar
BRAKES	**F:** 13.0-inch vented disc **R:** 13.0-inch disc	**F:** 12.6-inch vented disc **R:** 12.4-inch vented disc	**F:** 12.6-inch vented disc **R:** 13.0-inch disc	**F:** 12.6-inch vented disc **R:** 12.8-inch disc	**F:** 13.2-inch vented disc **R:** 12.2-inch vented disc
STABILITY CONTROL	traction off	partially defeatable, traction off	traction off	traction off	partially defeatable, traction off
TIRES	Bridgestone Ecopia H/L 422 Plus 265/50R-20 107T M+S	Michelin Premier LTX 235/55R-20 102H M+S	Continental CrossContact LX Sport 245/50R-20 102H M+S	Falken Ziex CT50 A/S P255/50R-20 104V M+S	Continental CrossContact LX Sport 255/50R-20 105T M+S

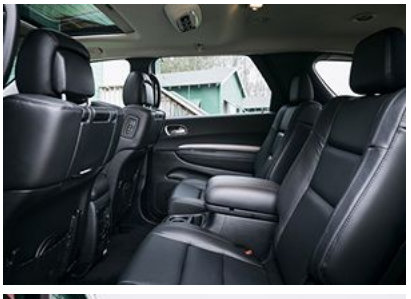
CAR AND DRIVER TEST RESULTS

ACCELERATION					
0–30 MPH	2.6 sec	**2.2 sec**	**2.2 sec**	2.3 sec	2.9 sec
0–60 MPH	7.8 sec	6.1 sec	**6.0 sec**	6.8 sec	7.9 sec
0–100 MPH	20.9 sec	**17.2 sec**	**17.2 sec**	19.0 sec	20.2 sec
1/4-MILE @ MPH	16.0 sec @ 88	15.0 sec @ **94**	**14.8 sec @ 94**	15.4 sec @ 91	16.0 sec @ 89
ROLLING START, 5–60 MPH	8.3 sec	6.4 sec	**6.3 sec**	7.5 sec	8.2 sec
TOP GEAR, 30–50 MPH	4.2 sec	**3.3 sec**	3.5 sec	3.4 sec	3.9 sec
TOP GEAR, 50–70 MPH	5.7 sec	4.8 sec	**4.7 sec**	**4.7 sec**	5.2 sec
TOP SPEED	117 mph (gov ltd)	131 mph (gov ltd)	113 mph (gov ltd)	**132 mph (gov ltd)**	116 mph (gov ltd)
CHASSIS					
BRAKING, 70–0 MPH	190 ft	**173 ft**	183 ft	179 ft	174 ft
ROADHOLDING, 300-FT-DIA SKIDPAD	0.76 g*	**0.85 g***	0.80 g*	**0.85 g***	0.84 g*
610-FT SLALOM	38.6 mph*	**40.7 mph***	39.9 mph*	39.9 mph*	37.6 mph*
WEIGHT					
CURB	5131 lb	4391 lb	**4300 lb**	4342 lb	4728 lb
%FRONT/%REAR	49.0/51.0	56.5/43.5	56.4/43.6	55.3/44.7	55.1/44.9
CG HEIGHT	27.0 in	**26.0 in**	27.5 in	**26.0 in**	27.5 in
FUEL					
TANK	**24.6 gal**	22.0 gal	19.5 gal	19.5 gal	18.6 gal
RATING	87 octane	87 octane	87 octane	93 octane	87 octane
EPA COMBINED/CITY/HWY	21/18/25 mpg	20/18/25 mpg	22/19/**26 mpg**	**23/20/26 mpg**	19/17/23 mpg
***C/D* 400-MILE TRIP**	16 mpg	20 mpg	19 mpg	**21 mpg**	20 mpg
PRACTICAL STOWAGE					
NO. OF 9 X 14 X 22-IN BOXES, BEHIND F/M/R	28/17/**5**	28/13/2	**38**/17/4	25/11/2	**38/18**/4
LENGTH OF PIPE	**144.0 in**	137.5 in	139.0 in	134.0 in	143.0 in
LARGEST FLAT PANEL, LENGTH X WIDTH	83.5 x 42.5 in	82.0 x 42.5 in	84.0 x 44.0 in	80.0 x 40.0 in	**85.5 x 45.0 in**
SOUND LEVEL					
IDLE	38 dBA	41 dBA	**37 dBA**	**37 dBA**	41 dBA
FULL THROTTLE	76 dBA	78 dBA	78 dBA	**71 dBA**	76 dBA
70-MPH CRUISE	67 dBA	68 dBA	67 dBA	**66 dBA**	68 dBA

**Stability-control inhibited.*

Tested by DAVID BEARD, MIKE SUTTON, *and* ERIC TINGWALL *in Chelsea, MI*

Dodge Durango [+] High tow rating, good infotainment, no shortage of personality. [–] Slow, lacks grip, overstuffed in every way but under the hood. [=] The truck you imagine it to be, minus the V-8 it needs.



steering input causes the soft suspension to lean. Even when we weren't boiling its brake fluid, the Pilot's pedal was spongy and had too much travel. Its 280 horsepower and the lightest curb weight of the group, at 4300 pounds, made the Pilot the quickest at the test track. But the raucous grate of its V-6 above 4000 rpm will make most drivers reluctant to use the full powerband.

Campers coming to Al-Gon-Quian are told to leave their electronics at home, a directive we'd like to issue to Honda. The company's button-free infotainment system borders on unusable in the Pilot; the only saving grace comes with the adoption of Android Auto and Apple CarPlay for the 2017 model year. Indeed, the Honda is laden with features and amenities—a category it won—including one-touch second-row seats that are as genius as any bit of engineering in the rest of the vehicle. They provided almost minivan-like ingress and egress, even without sliding rear doors. We were surprised not to find the HondaVAC, the Odyssey's signature gimmick, aboard the Pilot, given how closely the rest of this crossover hews to the minivan paradigm.

Honda seems to have focused almost exclusively on the big question: How to most efficiently pack passengers into a transportation box? At that it has succeeded, yet the rest of the Pilot makes us think that once the packaging engineers finished, everyone else went home, too.

4. Dodge Durango

Dodge has been selling the Durango for so long that we almost expect it to have an in-dash cassette player, with the volume knob broken off after being turned to 11 and Iron Maiden's "Number of the Beast" stuck in the deck. Alas, the Durango uses the same highly functional infotainment system as every other FCA product for the past many years. Ditto the switchgear, including a rotary gear selector. And it also uses the same anemic Pentastar V-6, making 295 horsepower here, that powers almost everything Mopar, from minivans to pickups. Yet this commonality doesn't prevent the Durango from distinguishing itself with a real personality.

You sit up higher than in any of the others here, and from this command position the utter lack of feedback from the steering seems like a feature more than a failing. The Durango's seats are comfortably

The Durango is more likable than it is great. It's truckish and bodacious and easily the reddest of all the competitors. It's also the only vehicle in this group that really could have used a V-8.

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GMC Acadia [+] Plenty of power, great brakes, handles like a sports sedan. [–] Chintzy interior, lethargic transmission, pricey. [=] A crossover with a Camaro's heart should be fun, but this feels unfinished.

overstuffed but offer no lateral support, which we noticed in the very first kink of our handling loop when the steering wheel abruptly transitioned into an emergency grab-handle. A little aggression from the driver and the rear end of the Dodge actually gets loose—unlike in all the others, which just understeer. The Durango's exhaust sounds tough, and a stiff ride and firm brakes complete its truckish mien. Unsurprisingly, the Dodge is the one we would choose to tow the camp canoe trailer down to the waterfront, as it boasts a comparo-best 6200-pound rating.

But workaday qualities matter less in this class than they once did. The Durango showed its age against the field in numerous ways, mostly in its sheer enormity. It was the longest and heaviest vehicle we tested, and, at 5131 pounds, it recorded the worst fuel economy in the test by far. Its size held it back in every dynamic enterprise, too. Its skidpad grip of 0.76 g was the lowest despite Dodge fitting the Durango with the widest tires (sized 265/50R-20) of any of our competitors. Braking distance also suffered, with the Durango's 190-foot stop from 70 mph ranking dead last.

Dodge also offers the Durango with a 360-hp V-8, which isn't any more rational but probably makes more sense for this wannabe muscle truck.

3. GMC Acadia

The Acadia arrived at Al-Gon-Quian fresh off a stint at fat camp, where it dropped more than 650 pounds and seven inches in length. Now fitted with a detuned version of the roaring V-6 that GM stuffs under the hood of Camaros, the Acadia boasts the most power in the test at 310 horses. Combined with taut steering and a responsive chassis, the Acadia topped our slalom test. It also won braking, stopping from 70 mph in 173 feet, a foot less than the Atlas.

As a mechanical package, however, the Acadia was let down by its transmission, a six-speed automatic that is slow and clunky compared with the trannies in the other vehicles. The eight-speed gearboxes in the Dodge and particularly in the VW snap off shifts so quickly that you don't even notice, doing a stellar job of keeping their less powerful engines on the boil. Even the six-speed in the CX-9 is smoother than the Acadia's, which not only slams into higher gears but also seems reluctant to give them

Carrying the test's highest price and being tied for worst fit and finish is not a happy combination. It's a shame because the Acadia Denali has a nicely tuned chassis and the most horsepower in this group.

Finally, Volkswagen offers the big SUV that it's been avoiding building for more than a decade. It rides beautifully, handles competently, and is miraculously roomy. It's neither quick nor fun. Do you care?

up to a downshift. Oddly enough, the Acadia is unique in allowing the driver to select a two-wheel-drive mode in which only the front wheels receive torque. Use it for a few tenths-of-a-mile-per-gallon improvement in fuel economy, says GM, but understand that torque-steer will ensue under heavy throttle application.

Considering we drove the top-of-the-line Denali trim, the interior is disappointing. The entire lower half of the dashboard is rendered in cheap plastic that could very well be the same stuff that usually decorates wheel arches. Evidence of cost cutting is rampant, from the flimsy sunroof shade to the sharp edges of the plastic trim on the steering wheel and instrument panel. Only the passenger side of the second row tilts forward for easiest access to the seats in the back, which were quite a bit more cramped than those in the larger Pilot and Atlas.

When we tabulated the final scores, the Acadia beat the ancient Durango by only a single point. Because for all the newness of its platform and engine, the GMC seems immediately dated by its interior styling. The fake wood trim is as bad as anything from the malaise era, and GM's corporate infotainment system is as old as FCA's but not as good. The Acadia really needs to return to the arts and crafts building, because it's come up a few Popsicle sticks short.

2. Volkswagen Atlas

Here's the big lesson we brought home from camp: There are two paths you can go by, but in the long run, it comes down to size. If you've got more than two kids, or expect to use the third row of your crossover the majority of the time, you need an Atlas. Its third row is as spacious as the main camp lodge, even with adults in all seven positions. The second row has enough legroom to stretch out like you're kayaking. And both rows fold perfectly flat for when you'd like to carry an actual kayak.

Like the GMC, the Atlas is replete with plastic and fake wood, but VW at least understands how to class up an interior a bit better. The grain pattern on the dash is so stylized that it's not even pretending to be authentic wood, and the overall quality of the plastic is higher, with better fit and finish. It's still a measure behind the gorgeous and expensive-looking CX-9, but

Volkswagen Atlas [+] As roomy as a VW bus, rides like a VW Phaeton, exactly what you'd expect from Volkswagen. [–] Slow, boring styling, we waited 10 years for this? [=] The clear choice when size matters.

FINAL RESULTS

Shell V-Power NiTRO+ Premium Gasoline
The Official Fuel of CAR AND DRIVER

nobody is going to climb into your Atlas and question why you paid almost $50,000 for it.

We did question how VW thought it could get away with launching this important and long-in-development new model with an engine that's 26 years old. Of course, the company has a well-demonstrated talent at hiding things, on full display again with the VR6 under the hood of the Atlas. Quiet and smooth are two words we never thought we'd use to describe one. The eight-speed transmission does a commendable job of making the Atlas feel like it has more than 276 horsepower, but good gearing and a responsive throttle didn't keep the VW from being the slowest to 60 mph.

On the road, the Atlas immediately identifies itself as coming from the Jetta and Passat side of the family, rather than the European one. The steering is light and makes maneuvering the giant

	Maximum points available	▶ MAZDA CX-9 SIGNATURE AWD	VW ATLAS SEL PREMIUM 4MOTION	GMC ACADIA DENALI AWD	DODGE DURANGO GT AWD	HONDA PILOT ELITE AWD
RANK		**1**	**2**	**3**	**4**	**5**
VEHICLE						
DRIVER COMFORT	10	**9**	**9**	7	8	7
ERGONOMICS	10	8	**9**	7	8	6
SECOND-ROW COMFORT	5	4	**5**	4	**5**	**5**
SECOND-ROW SPACE*	5	3	4	4	1	**5**
THIRD-ROW COMFORT	5	2	**5**	3	4	3
THIRD-ROW SPACE*	5	2	**5**	3	3	**5**
CARGO SPACE*	5	1	**5**	2	3	3
TOWING CAPACITY*	5	0	0	3	**5**	0
FEATURES/AMENITIES*	10	5	8	7	9	**10**
FIT AND FINISH	10	**9**	8	6	6	7
INTERIOR STYLING	10	**10**	7	6	7	6
EXTERIOR STYLING	10	**9**	8	6	8	5
REBATES/EXTRAS*	5	0	0	0	**1**	0
AS-TESTED PRICE*	20	**20**	18	17	19	19
SUBTOTAL	115	82	**91**	75	87	81
POWERTRAIN						
1/4-MILE ACCELERATION*	20	17	14	19	14	**20**
FLEXIBILITY*	5	3	**4**	**4**	**4**	**4**
FUEL ECONOMY*	10	**10**	9	9	5	8
ENGINE NVH	10	7	**8**	6	7	5
TRANSMISSION	10	**9**	**9**	5	6	4
SUBTOTAL	55	**46**	44	43	36	41
CHASSIS						
PERFORMANCE*	20	19	19	**20**	16	18
STEERING FEEL	10	**9**	7	7	7	5
BRAKE FEEL	10	**8**	7	**8**	6	3
HANDLING	10	**10**	7	7	6	4
RIDE	10	8	7	**9**	7	6
SUBTOTAL	60	**54**	49	49	42	36
EXPERIENCE						
FUN TO DRIVE	25	**23**	18	16	17	11
TOTAL	255	**205**	**202**	**183**	**182**	**169**

These objective scores are calculated from the vehicle's dimensions, capacities, rebates and extras, and/or test results.

buslike VW easy. Its suspension is soft and tuned for compliance such that the Atlas absorbed the jolts and jounces of our rutted camp driveway better than any other. It's always competent, and you'd never accuse the VW of being sloppy like the Honda or sporty like the Mazda. Yet it just does its job in that unassuming way, something that Volkswagens of the present need to do to better capture what made Volkswagens of the past so special.

1. Mazda CX-9

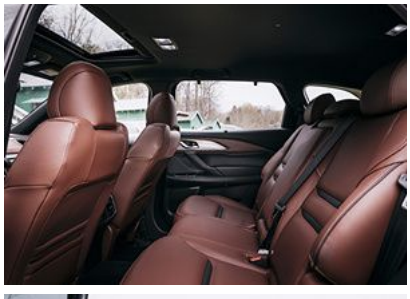
Provided you're merely midstream in your spawning, let us offer this bit of advice: There's still time to change the road you're on. Because if you have too many offspring—perhaps as few as two—your family will have outgrown the Mazda CX-9. Its third row is tiny and tough to access, and even the second row is comparatively tight. Once you really, truly need your minivan surrogate, you've already sized yourself out of this tall wagon.

This is a shame because it drives so much better than any of the others in this test. The CX-9 is nimble and agile, matching the Acadia for the best-in-test roadholding and lowest center of gravity. Weight transfers smoothly in the CX-9, which feels better balanced and more compact than the others. Yes, its turbocharged inline-four is down on power, but 310 pound-feet of torque mitigates the effect. There is a flow to the controls of the Mazda that is not present in the GMC or any other mainstream crossover of this size. If we were picking teams for capture the flag, the Mazda would be our first choice. It would also be our first choice for cabin mate, hiking buddy, or pretty much any other metaphor for comparo winner.

The CX-9 is also quiet, besting the pack both under acceleration and at cruising speed. Isn't peace and quiet why parents send their kids to camp in the first place? Combine this serenity with the nicest cabin and the tightest seams and panel gaps in our field, and the CX-9 was unquestionably the most luxurious. That it carried the lowest as-tested price only makes the Mazda that much more attractive to us.

And it's attractive. Not quite as beautiful as Mazda's small cars, but exceptional-looking in this class of boring boxes. The CX-9 is a compelling package, and although that package is not the largest, it is the best.

Mazda CX-9 [+] Quiet, luxurious, controls have the flow of a sports car's. [–] Small cargo area, hard-to-access third-row, only an occasional-use seven-seater. [=] A 2 in a plus-size world is a 10 in our book.



Yes, we awarded the win to the three-row SUV with the least amount of cargo space and the best handling. But for buyers who might use the third row only occasionally, the CX-9's moderate size is no demerit.

GOMSHOES

A CONGRESSIONAL-GRADE INDEPENDENT INVESTIGATION INTO FIVE STICKY SUMMER-PERFORMANCE TIRES.

. BY ERIC TINGWALL

. PHOTOGRAPHY BY MARC URBANO

You've likely heard the timeless wisdom that tires are the most important component on your car. It's true. Assuming your car is equipped with functioning braking and steering systems, plus seatbelts and a powertrain to propel it, that is. Indeed, assuming your car is in fact a car and not a cardboard box with a paper-plate steering wheel, tires are critical.

To help inform this most important purchase, we assembled five grippy sets of rubber from the max-performance class of summer tires, ranging from $153 to $198 per tire in our 245/40R-18 test size. It's possible to buy stickier stuff, but the tires collected here exist in the sweet spot for street-performance tires, with excellent dry grip, impressive wet-weather performance, and expected tread life of 20,000 to 30,000 miles. It's no coincidence that tires from this class are factory fitments on Porsches, BMW M cars, and Corvettes. The engineers that developed your car devoted months—possibly even years—of their lives to selecting the original-equipment tires. But performance is merely one element on a list of priorities that also includes optimizing for cost and weather conditions that may not exist where you live. If you're looking to boost your car's performance with a set of sticky summer rubber, this is where you start.

We conducted our testing in the shadow of Tire Rack's South Bend, Indiana, headquarters, just paces from one of the nine warehouses that hold the more than 1 million tires the company keeps on hand. On a 10-acre track in identically equipped BMW 430i Gran Coupes, we measured lateral grip, braking from 50 mph, and lap times around Tire Rack's autocross course. The circuit is short, at just 0.3 mile, but then long straights offer virtually no insight into a tire's performance. This rapid-fire tire exam is a chain of constant cornering with a slalom, a half-lap around the skidpad, and several tight right-handers that demand precise braking, a tidy line, and measured accelerator inputs. We repeated the exercises in the dry and on pavement saturated by a sprinkler system spraying 380 gallons of water per minute.

Our sound meter reported minimal measurable differences between the five tire sets at a steady 60 mph, though our ears did pick up meaningful differences in sound quality on public roads. We also used that loop to judge ride-quality attributes such as impact harshness over broken and patched pavement.

We were joined by Spencer Geswein, a talented shoe and meticulous engineer who spent nearly 10 years evaluating tires for Michelin in everything from Vipers and Vettes to a fully laden ambulance. He's been a part of our evaluation team for prior tire tests, providing shrewd insights and robotic consistency behind the wheel. How consistent? Throughout our testing, we returned to a reference tire to recalibrate our subjective baseline and check if external factors were influencing our lap times. Over four and a half hours and some 70 laps on the dry-testing day, Geswein's autocross time on the reference tire—an average of his two fastest laps—varied by just 0.03 second. Further evidence of Geswein's credibility: He takes notes on graph paper.

As in past tests, we eliminated the possibility of bias by running autocross laps without knowing which tires were on the cars. Geswein wasn't even told what tires were included in the test until after he turned his last lap and finalized his notes. When tires A through E became Hankooks, Pirellis, Continentals, Michelins, and Goodyears, this is how they ranked:

We mounted all tires to identically optioned BMW 430i Gran Coupes. Our driver was unaware of which tires were on the cars during autocross laps.

5. GOODYEAR EAGLE F1 ASYMMETRIC 3

PRICE PER TIRE: $180
SERVICE DESCRIPTION: 97Y
LOAD RANGE: XL
TREAD DEPTH: 10/32 in
UTQG WEAR RATING: 300
TREAD-LIFE WARRANTY: none

At $180 per tire, the Goodyear Eagle F1 Asymmetric 3 carries a price premium that can't be justified by its performance. Despite costing $27 more than the cheapest tire in our test, the Goodyear was the caboose in every performance metric except for wet braking. In that test, the Goodyear's 107-foot stop landed it in third place.

It also wilts under subjective scrutiny, lacking high lateral firmness, the ability to impart steering feel, and the progressive rise and fall of adhesion as you approach and exceed its ultimate grip. Geswein noted that "excursions beyond the limit kill lap times," as grip is slow to return once the tire starts to slide.

Even on our road drive, when our butts and ears were tuned to observe ride quality and road noise, we couldn't help but notice that the Goodyear Eagle F1 Asymmetric 3 was unsettled by midcorner bumps in ways the other tires weren't. Goodyear's tire does deliver less ride harshness than both the Hankook and Continental tires, and road noise is nicely managed, but neither of those qualities is what makes a summer-performance tire great.

4. HANKOOK VENTUS V12 EVO2

PRICE PER TIRE: $156
SERVICE DESCRIPTION: 97Y
LOAD RANGE: XL
TREAD DEPTH: 10/32 in
UTQG WEAR RATING: 320
TREAD-LIFE WARRANTY: none

This tire possesses the rare and admirable ability to maintain relatively high grip compared with its peak grip even as the tire begins to slide. This is particularly apparent when the front end begins to push into understeer. Where other tires scrub speed and sail off the driving line, the Hankooks hang on longer and with only a slight drift off the intended path. This means the driver is scarcely penalized for sloppy piloting. The Hankook is easy to drive at the limit, with quicker-than-average recovery when the driver attempts to reel it all in.

In other categories, the Hankook impresses less. The Ventus V12 Evo2 is laterally soft when loaded up in a corner, and steering inputs are imprecise. On wet surfaces, its favorable progressivism dries up. It also emits tones that penetrate the cabin, with a high-pitched zip as it rolls and loud thumps over imperfections.

And while easy to drive, the Hankook's performances in both dry and wet tests were only marginally better than those of the Goodyear. Its fourth-place position was cemented by this objective performance that placed it in, well, fourth place.

3. PIRELLI P ZERO

PRICE PER TIRE: $153
SERVICE DESCRIPTION: (97Y)
LOAD RANGE: XL
TREAD DEPTH: 9/32 in
UTQG WEAR RATING: 300
TREAD-LIFE WARRANTY: none

Pirelli's latest P Zero—reengineered for 2016 and identified by a small PZ4 molded into the sidewall—can be driven fairly quickly, as evidenced by its dry lap time, the second fastest in the test. Doing so, however, requires focus to toe the limit and patience to delay throttle inputs slightly. Without that diligence, it becomes easy to overdrive the tire, at which point grip levels fall off rapidly—but not as detrimentally as with the Goodyear—making graceful and quick recovery difficult.

Even a driver of Geswein's caliber can't make the P Zero more than a midpack performer in the wet, as the Pirelli's grip takes a big hit when the water flows. The P Zero used 109 feet of pavement to stop from 50 mph in the wet, 14 feet more than the best-in-test Continental. The Pirelli also tied the Goodyear for the lowest lateral grip in the wet at 0.75 g.

But it does offer commendable compliance on the road, and at $153 apiece, it's the cheapest tire here. When we look at the test results, though, there's a clear dividing line separating the top tier from the rest of the class. The Pirelli is on the wrong side of it.

2. CONTINENTAL EXTREMECONTACT SPORT

PRICE PER TIRE: $164
SERVICE DESCRIPTION: 97Y
LOAD RANGE: XL
TREAD DEPTH: 10/32 in
UTQG WEAR RATING: 340
TREAD-LIFE WARRANTY: 30,000 miles

Senna at Donington. Hunt in Japan. ExtremeContact Sport in South Bend. Okay, the Continental can't make you a wet-weather hero, but it is the choice tire when both rain and pilot are driving hard. The Continental swept all three wet tests with big margins and showed the smallest performance drop-off between dry and wet tests. Chief among its waterproof virtues, the Continental maintains relatively high grip when the tire starts to slide, unlike the Pirellis and Goodyears.

The ExtremeContact Sport locked in second place with a solid performance in the dry, although not exactly threatening the Michelin. It delivers sharp steering precision that makes it feel alert and responsive when driven casually, but that quality fades when pushed past the limit in the dry.

Our ears registered louder thwacks compared with the competitors over the same cracks and expansion joints on-road—similar to the almost-metallic clank of a bouncing basketball. But that's a small price to pay for exceptional wet grip and impressive dry performance. Plus, Continental asks only $164 for the ExtremeContact Sport, $34 less than our winner.

1. MICHELIN PILOT SPORT 4 S

PRICE PER TIRE: $198
SERVICE DESCRIPTION: (97Y)
LOAD RANGE: XL
TREAD DEPTH: 9.5/32 in
UTQG WEAR RATING: 300
TREAD-LIFE WARRANTY: 30,000 miles

The Pilot Sport 4 S bundled the test's highest lateral grip and shortest stopping distance into the only sub-30-second lap time. That betters the next-fastest tire, Pirelli's P Zero, by 0.5 second.

In driving, speed usually grows as confidence grows, and this Michelin exemplifies that idea. The Pilot Sport 4 S assures the driver with its tenacious grip, stellar lateral stiffness, and progressive at-the-limit behavior. It is easy and rewarding to drive aggressively, and it allows the driver to return to full throttle earlier than any other tire in this test.

Out in the real world, the Michelin demonstrated a subtle tendency to follow grooves in the road. Otherwise, the Pilot Sport 4 S is as docile in traffic as it is around a racetrack, never hammering down imperfections nor singing on the smooth stuff.

As with the Pilot Super Sport, Michelin is likely to be faced with so many automakers eager to fit the 4 S to their sports cars that it will turn customers away. Fortunately, you don't need Michelin's approval to fit your car with Pilot Sport 4 S tires.

CAR AND DRIVER TEST RESULTS

	▼ MICHELIN PILOT SPORT 4 S	CONTINENTAL EXTREME-CONTACT SPORT	PIRELLI P ZERO	HANKOOK VENTUS V12 EVO2	GOODYEAR EAGLE F1 ASYMMETRIC 3
DRY PERFORMANCE					
AUTOCROSS LAP	**29.5 sec**	30.1 sec	30.0 sec	30.3 sec	30.4 sec
BRAKING, 50–0 MPH	**79 ft**	**79 ft**	80 ft	81 ft	82 ft
ROADHOLDING, 200-FT-DIA SKIDPAD	**0.95 g**	0.94 g	0.92 g	0.92 g	0.90 g
WET PERFORMANCE					
AUTOCROSS LAP	32.2 sec	**31.8 sec**	33.2 sec	33.6 sec	33.8 sec
BRAKING, 50–0 MPH	101 ft	**95 ft**	109 ft	108 ft	107 ft
ROADHOLDING, 200-FT-DIA SKIDPAD	0.80 g	**0.83 g**	0.75 g	0.76 g	0.75 g
SOUND LEVEL					
60-MPH CRUISE	68 dBA	67 dBA	67 dBA	**66 dBA**	69 dBA

FINAL RESULTS

	RANK	1	2	3	4	5
DRY PERFORMANCE						
AUTOCROSS*	40	**40**	34	35	32	31
BRAKING*	20	**20**	**20**	19	18	17
ROADHOLDING*	20	**20**	19	17	17	15
FEEL	10	**10**	6	7	6	2
SUBTOTAL	90	**90**	79	78	73	65
WET PERFORMANCE						
AUTOCROSS*	20	18	**20**	13	11	10
BRAKING*	10	7	**10**	3	4	4
ROADHOLDING*	10	9	**10**	6	7	6
FEEL	10	9	**10**	6	4	3
SUBTOTAL	50	43	**50**	28	26	23
REAL-WORLD FACTORS						
PRICE*	10	7	9	**10**	**10**	8
SOUND QUALITY	5	**5**	3	4	2	4
RIDE	5	4	3	**5**	2	3
SUBTOTAL	20	16	15	**19**	14	15
TOTAL	160	**149**	**144**	**125**	**113**	**103**

These objective scores are calculated from the tire's price and test results.

NHRA CHAMPIONSHIP DRAG RACING
2035 FINANCIAL WAY, GLENDORA, CALIFORNIA 91741-4602 • (626)914-4761

To: FCA US LLC, regarding its Dodge brand

Date: November 30, 2016

This letter verifies that on Monday, November 21st, 2016 at Gainesville Raceway in Gainesville, Florida, the Dodge Challenger SRT Demon ran the quarter mile in an elapsed time of 9.650 seconds at 140.09 miles per hour. Both the elapsed time and the speed on this run exceeded the limits on 2008 OEM model-year and newer production cars and therefore violate our rules. The car exceeded our limits of 9.99 seconds and 135 miles per hour. Therefore, before this car can be run again at an NHRA Member Track, it must be brought into compliance with the rules and regulations found in Section 4 of the NHRA Rulebook. If you have any questions concerning this letter or the rules in Section 4 of the NHRA Rulebook, please contact me.

Sincerely,

Glen Gray
NHRA
Vice President, Technical Operations

DEMON
OFFICIALLY BANNED BY THE NHRA

DOMESTIC. NOT DOMESTICATED.

Dodge is a registered trademark of FCA US LLC.

Long-Term Test: When the tires get worn and the factory warranty runs out, that's where we come in. *Car and Driver* is your source for the 40,000-mile evaluation.

2016 CHEVROLET CAMARO SS

Arrival: Feb/2016
Departure: Apr/2017

—

Your quiet suburban cul-de-sac has officially been put on notice. _by Josh Jacquot

Consider this: When we parted ways with our long-term Corvette Stingray after 40,000 miles in the fall of 2015, it had consumed a set of rear tires, an HVAC controller, a set of axle seals, and an engine. Though much of this hardware was covered under warranty, the experience separated us from our sanity as thoroughly as it did the Stingray from its dignity. It left us wondering if Chevy's wondercar—and particularly that car's engine, the LT1 6.2-liter V-8—was up to the task of real performance-car duty. Further souring the exploit: We paid for the Corvette's first three oil and filter changes, which should have been covered by GM's maintenance plan.

Only two of those experiences replayed themselves with our long-term Camaro SS, which uses the same engine minus the dry-sump lubrication system. Once again, we paid the tab on a couple of oil changes that should have fallen to Chevy's Complete Care program and replaced a pair of worn rear tires. Yet the Camaro didn't throw a single mechanical fault—not one—on its way to 40,000 miles.

Rants & Raves

"When the Camaro's test data is compared with that of a Z51 Stingray, they are neck and neck, which is insane for the money."
—David Beard

"I'd rather live with the Mustang day to day."
—Mike Sutton

And, with only one exception, it matched or bettered every major performance milestone it achieved in its initial test when we reevaluated it to wrap this story. At 40,597 miles, its zero-to-60 time (4.0 seconds) and quarter-mile time (12.3 seconds at 118 mph) remained identical to what we measured at 3949 miles, 13 months earlier. Plus, its roadholding improved from 0.98 g in its first test to 1.01 g's at the end—using the same front tires it had in the earlier trial. Braking from 70 mph was identical at 149 feet. It also averaged 20 mpg during the course of its stay, 1 mpg better than the EPA's combined rating. We replaced the Camaro's rear Goodyear Eagle F1 Asymmetric 3 run-flat tires before our final test, but the Goodyear summer rubber split time on the car with Pirelli Sotozero winter tires.

Because excess is the whole point in Camaro-land, we outfitted ours with the most powerful engine then available, the 455-hp LT1. Mated with a six-speed manual and a limited-slip differential, the small-block made many friends during its time here. The 2016 V-8–equipped SS coupe started at $37,295, and we added only five options. The $5000 2SS package provided heated and ventilated power seats, a heated steering wheel, dual-zone climate control, and an 8.0-inch touchscreen. Our only performance add-ons were the $1695 magnetic-ride-control suspension and the $895 dual-mode exhaust, but we also tacked on the $495 Mylink audio system with navigation and black 20-inch, five-spoke wheels for $200. All in, a $45,580 Camaro.

Arriving in February 2016, our Alpha-platform Camaro, which GM says is 220 pounds lighter than the Zeta-platform car it replaces, was fresh off a comparison-test victory over the Mustang GT and had just received its first of two 10Best trophies (it won in 2016 and 2017). That we like this car is no secret. Part of this affection—the

photography by GREG PAJO

“THIS THING CAN BARELY CONTAIN ITS RAGE. IT’S A BERSERKER.”
—DANIEL PUND, DEPUTY EDITOR

largest part, it seems—is the way it sounds. In a logbook fraught with nitpicks, there's not a single complaint about the Camaro's engine noise. It is, in fact, this car's opus, its contribution to the modern muscle-car symphony.

Punch the dash-mounted start button, which is largely hidden from view behind the steering wheel, and the Camaro's LT1 doesn't just start, it explodes to life. Its initial eight-cylinder outburst is more patriotic than Lee Greenwood belting out "God Bless the USA" from the crown of the Statue of Liberty. It's wake-the-neighbors rowdy if lit in sport mode—the Camaro retains its drive mode through key cycles—but even across-the-street eye rollers forgive the noise if you offer them a ride.

Remarkably, the boom subsides, and thanks to the dual-mode exhaust, the Camaro becomes everyday-livable just by changing drive modes. Indeed, the Camaro's suspension compliance and travel came in for a lot of praise. The logbook bleeds with as many testimonials about the car's civility as it does with notes on its performance. "It's a nice grand tourer with creamy ride quality and comfortable seats," said associate online editor Joseph Capparella.

Parallels with the Mustang GT, which shared space in our long-term fleet during much of the Camaro's stint, were inevitable and much documented in the long-term wrap on the Ford [June 2017]. Demanding a one-word answer to one of the older questions in our craft—Camaro or Mustang?—elicits mayhem among the professionally opinionated, who insist on qualifying their response. Even so, an impromptu office quiz produced one simple, undeniable result: 50 percent more of us vote Camaro.

Notes like "easier to drive" and "more pleasant" venerate the Camaro in these comparisons. But sprinkled among them are more thoughtful reflections, such as: "The LT1's bawl alone puts the Camaro beyond the Mustang; the car's comprehensive dynamic superiority is just icing on the cake."

Nevertheless, one of the Camaro's strengths is its overall ease of use. An effortlessly modulated yet interminably robust clutch mediates between the 455-pound-feet lump up front and the 275-section-width Goodyears out back. A shifter with reasonable-length throws, well-defined gates, and perfect effort accommodates a lazy row of gears as capably as it does the no-lift shifts we executed during testing. Though that's not a technique we employ in standard tests, Chevy calibrates for it so we take advantage. At a much slower pace, the fuel-saving skip-shift algorithm that forces an upshift from first to fourth gear during tepid acceleration is more pronounced and intrusive here than in any recent GM vehicle, Corvette included.

It turns, too. The sport and track modes up its handling beyond what sane people are willing to explore on

Rants & Raves

"This car is so much easier to drive in traffic than the Mustang thanks to the smooth clutch and rev matching."
—Annie White

"The two-mode exhaust option is probably one of the most pony-car-appropriate features ever."
—Dave VanderWerp

"If you have to use reverse, it's best to just accept that you'll probably back into something."
—Jared Gall

"After 10 years of silent service, skip shift has reemerged as a real pain in the ass."
—Eric Tingwall

Service Timeline:
Kickin' ass, drinkin' oil.

Key: - Repairs - Damage - Maintenance - Normal Wear - Oil Additions

February 29, 2016
104 miles: Long-term test begins on Pirelli Winter Sottozero Serie II tires

April 5, 2016
2027 miles: We refit the factory Goodyear Eagle F1 Asymmetric 3 summer tires

April 6, 2016
2082 miles: Dealer updates MyLink software to add Android Auto capability, $0

May 27, 2016
6433 miles: We rebalance tires to address a vibration

June 6, 2016
8083 miles: Dealer performs oil change and routine inspections, $68

July 6, 2016
11,671 miles: We add 2.5 quarts of 5W-30 synthetic oil

August 3, 2016
14,499 miles: We add 1.0 quart of 5W-30 synthetic oil

August 8, 2016
14,756 miles: Dealer performs routine oil change, tire rotation, and inspections, $116

October 21, 2016
18,624 miles: We add 0.5 quart of 5W-30 synthetic oil

November 9, 2016
19,451 miles: We mount Pirelli winter tires

December 9, 2016
21,048 miles: We add 0.5 quart of 5W-30 synthetic oil

December 20, 2016
21,708 miles: Dealer performs 22,500-mile service, including oil change and replacing engine air filter, $114

January 6, 2017
23,076 miles: We add 2.0 quarts of 5W-30 synthetic due to dealer underfill

January 31, 2017
24,380 miles: And we add 1.0 quart of 5W-30 synthetic oil

The Camaro's interior foibles include low-mounted vents good only for cooling or heating our right hands and a near-total lack of rearward visibility.

our roads. There's a reason the 1LE version of this Camaro is quicker than an Audi R8 V-10 Plus in our Lightning Lap throwdown around Virginia International Raceway: The Camaro is no longer a knuckle-dragging, Cro-Magnon pony car. It is now a wildly capable piece of driving hardware, with the suspension and brakes to indulge those who would push the car to its limits. "It's easy to feel as if you're driving it hard without taking any real risks," notes the logbook at 27,000 miles.

Buying a Camaro and then griping about back-seat space is like going to a NASCAR race and bitching about the wine. Nevertheless, here's what you must know: The Camaro has a narrow greenhouse, unknowable corners, near-zero rear visibility, and, yes, back seats that are less usable than a Mustang's. These facts were not lost on our logbook scribes. "It's hard to imagine that Chevy could have made it less practical if it tried," reads one entry. The words "gun slit," "periscope," and "cave" appear so many times in our notes that we have forever banished them from the *C/D* lexicon. But there's no arguing with the truth; Stevie Wonder has a better sense of where his car is than the Camaro driver in some situations. It's a dilemma, and it's one that nearly half of us won't tolerate—even in exchange for all the dynamic blessings.

There are other problems, such as the fact that when its cupholders are filled with, well, cups, there's no sensible and accessible location to put a cellphone. So it's no small paradox that Chevy provides a wireless charging platform for compatible mobile phones *behind* the front seats. Chevy would likely point out here that our

March 9, 2017
29,238 miles: Dealer performs oil and filter change, $59

April 13, 2017
36,503 miles: Dealer performs oil and filter change, $82

April 27, 2017
39,248 miles: We refit Goodyear Eagle summer tires, replacing the worn rears, $761

April 30, 2017
40,000 miles: Long-term test ends

OPERATING COSTS (FOR 40,000 MILES)

MAINTENANCE	$439
NORMAL WEAR	$761
REPAIR	$0
GASOLINE (@ $2.62 PER GALLON)	$5240

SERVICE

DEALER VISITS (SCHEDULED/UNSCHEDULED)	5/1
DAYS OUT OF SERVICE	0
UNSCHEDULED OIL ADDITIONS	7.5 qt

car offers Android Auto and Apple Carplay. But small-item storage is a weakness. The pockets housed in the rearmost portion of the coupe's enormous doors are so puny and poorly placed that they can only be filled with irony.

A more worrying issue was our car's on-again, off-again oil consumption, as well as a dealer who, on at least one occasion, left the sump two quarts low after an oil and filter change. Never once did we witness a low-oil warning light, nor see signs of burning or leaking oil, but regular checks proved that by 20,000 miles, the consumption rate worked out to one quart every 4700 miles. A GM representative said that this fell "within the range of normal consumption." A 10-quart capacity doesn't hurt in this scenario, and only once after the short fill at 21,708 miles did we measure more consumption. We changed the oil and filter five times for a total of $439, which included inspections and a cabin air filter. Our only other service to the car was to rebalance the tires once to quell a vibration.

Rants & Raves

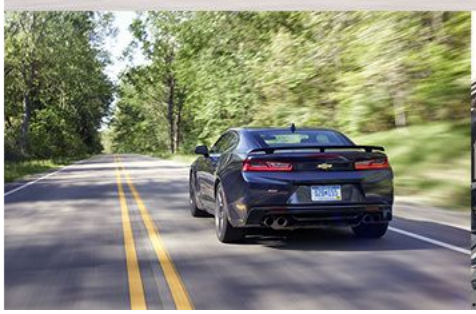
"Why are the vents at my knees?" *—Joseph Capparella*

"How about a vent or two for, um, the rest of me?" *—Alexander Stoklosa*

"The interior alone is enough for me to vote it down in a comparo." *—David Beard*

That the Camaro is a capable performance car as well as a smooth-riding everyday partner is certain. That it's a car for everyone who wants those attributes is less so. We remain divided on whether its obvious and painful compromises—ones that most profoundly impact necessary tasks such as, say, parking—are worth it. This entry from near the end of the Camaro's run in our stable sums it up best: "It is worth making some very questionable life choices to own a Camaro SS. This thing realizes every last inch and penny of the Corvette's otherwise untouchable performance. Yes, it is deeply and stupidly flawed, but it is perfect in a way that the Mustang will never be."

Chevy gets much right with the Camaro, but the coupe remains marred by deficiencies any reasonable person can't ignore. If it could combine the strengths of unhinged performance coupled to downright comfortable ride quality with the ability to see out of the thing, plus some small-item storage, it would make the Mustang question go away entirely.



2016 CHEVROLET CAMARO SS

PRICE AS TESTED **$45,580**
BASE PRICE **$37,295**

VEHICLE TYPE: front-engine, rear-wheel-drive, 4-passenger, 2-door coupe
ENGINE TYPE: pushrod 16-valve V-8, aluminum block and heads, direct fuel injection
DISPLACEMENT ..... 376 cu in, 6162 cc
POWER ..... **455 hp @ 6000 rpm**
TORQUE ..... **455 lb-ft @ 4400 rpm**
TRANSMISSION ..... 6-speed manual
WHEELBASE ..... 110.7 in
LENGTH ..... 188.3 in
WIDTH ..... 74.7 in
HEIGHT ..... 53.1 in
CURB WEIGHT ..... 3718 lb

WARRANTY

3 years/36,000 miles bumper to bumper
5 years/60,000 miles powertrain
6 years/100,000 miles corrosion protection
5 years/60,000 miles roadside assistance

MODEL-YEAR CHANGES

2017: none

CAR AND DRIVER TEST RESULTS

PERFORMANCE

ZERO TO 60 MPH:
NEW ..... 4.0 sec
40,000 ..... 4.0 sec
ZERO TO 100 MPH:
NEW ..... 8.8 sec
40,000 ..... 8.9 sec
ZERO TO 120 MPH:
NEW ..... 12.8 sec
40,000 ..... 12.7 sec
ROLLING START, 5–60 MPH:
NEW ..... 4.8 sec
40,000 ..... 4.3 sec
1/4-MILE:
NEW ..... 12.3 sec @ 118 mph
40,000 ..... 12.3 sec @ 118 mph
BRAKING, 70–0 MPH:
NEW ..... 149 ft
40,000 ..... 149 ft
ROADHOLDING, 300-FT-DIA SKIDPAD:
NEW ..... 0.98 g
40,000 ..... 1.01 g
TOP SPEED ..... 165 mph (*C/D* est)
EPA FUEL ECONOMY, COMBINED/CITY/HWY ..... 19/16/25 mpg
***C/D*-OBSERVED FUEL ECONOMY** ..... 20 mpg

LIFE EXPECTANCIES

(ESTIMATED FROM 40,000-MILE TEST)
FRONT TIRES ..... 35,000 miles
REAR TIRES ..... 20,000 miles
FRONT BRAKE PADS ..... 90,000 miles
REAR BRAKE PADS ..... more than 100,000 miles

WHAT BITS AND PIECES COST

HEADLAMP $1277
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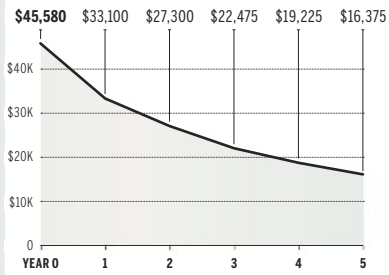
OIL FILTER $6
WHEEL (FRONT/REAR) ..... $610/$613
TIRE (FRONT/REAR) ..... $365/$380
WIPER BLADES (LEFT/RIGHT) ..... $30/$30
FRONT BRAKE PADS $92

FIVE-YEAR DEPRECIATION

Depreciation data from ALG. Based on 15,000 miles per year.



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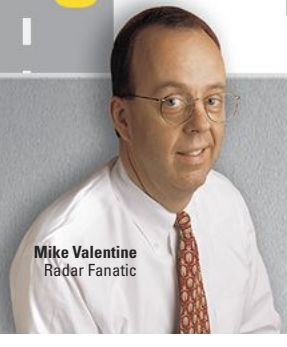
First obligation of V1: V1 will never miss a threat. Quiet is nice, but missing an ambush is fatal. That's why we don't use GPS. GPS knows only location, and if the frequency range of a new threat is the same as that of a blocked alarm, *sorry*, but GPS programming demands silence at that location, even if it's a trap. V1 will never fail you that way.



Mike Valentine
Radar Fanatic

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▲ *Newcomer*

2017 FORD F-150 RAPTOR SUPERCREW

Arrival: Apr/2017
Miles: 2576
Observed mpg: 14

—

WHEN IT COMES to traversing Michigan potholes, there are two strategies. Most folks employ the balanced-human approach: Plod through the minefield slowly and easily so things don't get bent. The second tactic requires more, let's say, commitment. Every vehicle has a safe speed at which it will fly right over the craters, occasionally skimming their edges but never dropping a wheel below the surface. It's the automotive equivalent of a supercross racer in the whoops. When perfectly executed, both are effective means to get home. Strategy two comes with the reward of getting there sooner and the risk of, say, removing an axle.

Until now, this was an actual dilemma.

Our long-term Ford F-150 Raptor, then, is a $64,800, 450-hp dilemma killer. That it tears a commercial-truck-sized hole in the atmosphere completing a 14.2-second quarter-mile at 97 mph and hits 60 in only 5.5 seconds, well, those things are just gravy. Our truck is loaded with $11,660 in options including a 4.10:1 final drive, Torsen limited-slip front differential, and 360-degree cameras. Thus far we've discovered three faults: Ten is too many gears. The pickup is too wide for at least one Michigan carwash. At full honk, it sounds like a Pontiac Sunbird in the Holland Tunnel.

But, good Lord, nothing has ever cared less about potholes. —*Josh Jacquot*

▼ *Newcomer*

2017 PORSCHE 718 BOXSTER S

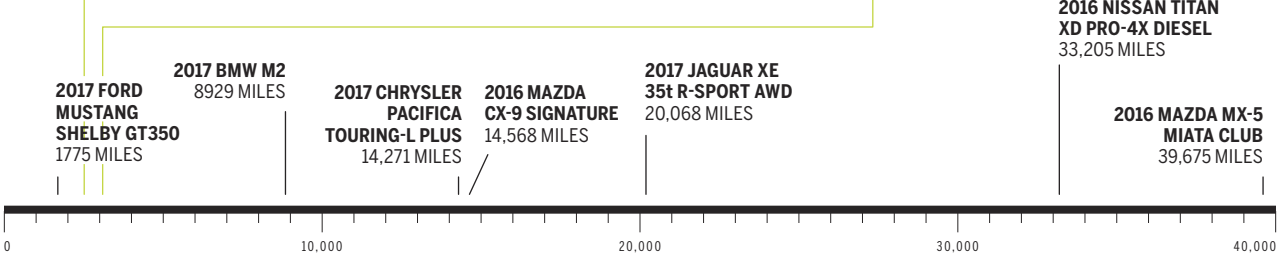
Arrival: Apr/2017
Miles: 3064
Observed mpg: 20

—

CRISP DYNAMICS ARE never bad, but they're rarely better than when there's fresh summer air swirling through the cockpit. Riding in on a 10Best win, the 982 generation of Porsche's entry-level sports cars brings big changes: chiefly, boosted four-cylinders that replace free-breathing sixes. Also, the 718 moniker is new, and a lineup shuffle finally prices the convertible above the Cayman coupe.

Porsche's configurator is a sort-of tapas menu for four-wheeled indulgence; it's tempting to order one of everything. So we consider our $81,630 car an uncharacteristic example of self-restraint. Naturally, we started our build with the $69,450 S for its additional 50 horsepower over the $13,800-cheaper base Boxster. From there, we tacked on an additional $12,180 in options: everything from the sport exhaust at $2540 to the separately priced ventilated ($760) and heated ($530) seats. Does it go without saying that our car carries the row-your-own six-speed? After a 2000-mile break-in, our Boxster S ran the zero-to-60 sprint in 4.3 seconds and looped the skidpad with 1.03 g's of cornering grip in a show that crowds the base 911's performance. Those figures matter little, though, because the appeal of mid-engined Porsches has never been in the numbers. It's been in the feel. —*Eric Tingwall*

PHOTOGRAPHY: RAPTOR BY GREG PAJO, BOXSTER BY MICHAEL SIMARI



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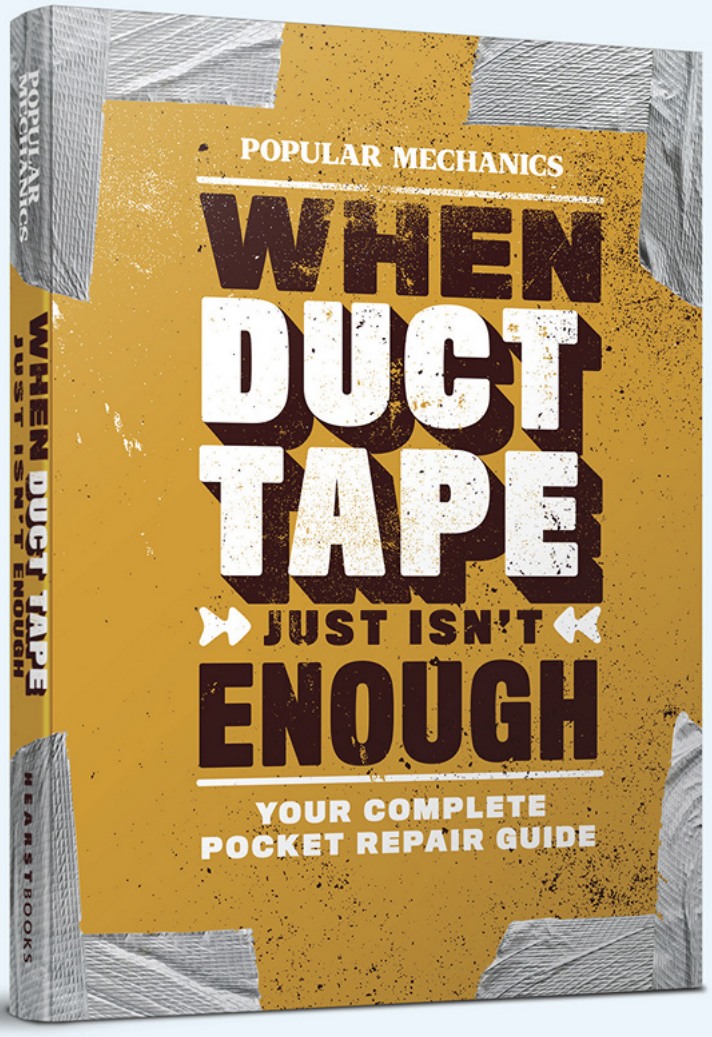

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The Apostate

BMW improves the **M5** with all-wheel drive, electric power steering, and—wait for it—a torque converter. _by Scott Oldham

IT'S A WEEK AFTER the Dodge Challenger SRT Demon's debut and it is still blowing up the internet. Its specs have already been tattooed on the faces of more than a few of the Mopar faithful. But Dirk Häcker, vice president of engineering at BMW's M division, hasn't heard of America's newest and most powerful muscle car.

"How much power?" he asks.

"840 horsepower."

He nods. "Does it have a manual transmission?"

"Automatic only," we say.

"All-wheel drive?"

"Nope, rear-wheel drive."

He takes another sip from his drink. "Maybe my son has heard of it," he says with more than a hint of derision. "He likes American performance cars."

Häcker's questions aren't surprising considering the drivetrain in his team's latest creation, the 2018 BMW M5, known internally as the F90. It will be the first M5 with all-wheel drive, electrically assisted power steering, and—hold on to your Save the Manuals! T-shirt—no available manual transmission. (For the record, the 2006 E60 M5 launched exclusively with an automated manual, but a row-your-own gearbox was made available in the U.S. the next year.) And if that's not enough to send the M faithful into a panic, the sixth generation of BMW's supersedan is the first with a traditional automatic transmission. That's right—the thing has a torque converter.

Relax. The following day, a dozen laps in camouflaged M5 prototypes around the road courses at BMW's Miramas test facility in the south of France show that this car has the potential to be the best M5 since the E39. The M5's new hardware may be blasphemous, but the car itself is good. Very good.

Even the M division can no longer ignore the explosion of popularity that all-wheel-drive sedans enjoy in the United States. Not when the M5's German rivals, the Mercedes-AMG E63 and the Audi RS7, are powering all four. "Development of this M5 started with all-wheel drive in mind," Häcker tells us.

Still, M's engineers recognize that every M must be a driver's car. So they built a true two-wheel-drive mode into the all-wheel-drive system that completely ignores the front axle regardless of

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your fear or the car's slip angle. It's unique among BMW's xDrive models. With the push of a button, the engine's full brunt is sent to the electronically controlled limited-slip rear differential, which has been retooled with new carbon clutch plates that can range from wide open to completely locked.

The all-wheel-drive system uses the Magna-supplied transfer case from the 7-series xDrive's range, although its clutch plates are now carbon fiber instead of molybdenum for more precise temperature control and durability. BMW's M division has more engineers working on software than ever before, and that's where the real magic lies in this setup. The control unit, which is mounted under the car behind the left-front tire, analyzes steering angle, throttle position, and each wheel's drive torque, lateral load, and acceleration. It then determines how much locking force to apply to the center coupler and rear differential. Three settings progressively increase the M5's liveliness: four-wheel drive, four-wheel-drive sport, and two-wheel drive.

The system adds about 140 pounds, but BMW says the car is 88 pounds lighter than the portly 2016 model that hit nearly 4400. Weight-saving measures include more-extensive aluminum in the chassis, the new electric steering assist, and a standard carbon-fiber roof, although it's steel when paired with the optional sunroof. There's also a lithium-ion battery. The diet, combined with all-wheel-drive grip, will make this the quickest M5 ever, says BMW: Use the launch control and it will storm to 60 mph in less than 3.5 seconds. That's more than half a second quicker than what BMW quoted for its predecessor, which we tested at 3.7 seconds.

Although total mass is down, the bias has shifted slightly forward. There's also less tire stagger than before. Don't let any of that concern you; the front-end grip is impressive. At Miramas, the big sedan feels light on its feet and reveals its very friendly nature at the adhesion limit of its optional Michelin Pilot Sport 4 S tires, 275/35ZR-20s in front and 285/35ZR-20s in the rear.

What's the M5 look like? Take a 5-series, remove the swirly stickers, then add some M stuff. The car shown on the screen above right is just a regular 5. We checked.

This is an easy car to drive quickly. There's just enough body roll to feel the car take a set, and it rotates nicely on the brakes. But it never feels as if it's going to snap around and spit you off the road. The response from the all-wheel-drive system is consistent, linear, and predictable. This M5 is actually tossable, and it will drift when configured with its xDrive system in its four-wheel-drive sport setting and the stability control system in M dynamic mode, which allows for more tire slip. In two-wheel-drive mode with stability control turned off, you can powerslide it like an E90 M3.

The steering requires less effort than before, and it's 25 percent quicker, which helps the car feel smaller and lighter than it is. It's a huge improvement over the steering in the previous car. There's also more feel, but not as much as you get from a Porsche Panamera. The iron-rotor brakes are easy to modulate and showed no fade even after seven hard Miramas laps. Carbon-ceramic rotors are optional.

[+] Rear-drive mode, easy to drive at the limit, all-weather traction, quicker than before.
[–] Steering could still have more feel, one less manual.

Chassis changes from the 5-series include a slight increase in track width and new aluminum-bodied dampers. And also unlike the F10 M5, this one uses a rubber-isolated rear subframe. This will be the fastest M5 ever around the Nürburgring, where testing is ongoing.

The engine is strong but a bit anticlimactic, only because it's so familiar. Known internally as the S63, it's the same

Drivelines

twin-turbo 4.4-liter V-8 with direct injection and variable valve timing that powered its predecessor, but it is modified for greater power and durability. The turbochargers mounted between the cylinder banks are larger and produce more boost, and BMW dialed up the fuel-injection pressure for more precise delivery and increased volume.

There's a new, higher-capacity oil pump, and a new oil pan is required to package the all-wheel-drive system. The direction of the oil flow has also been modified slightly, but Häcker wouldn't get more specific. He also wouldn't tell us much about the changes to the cooling system, although he admits the water pump has a higher capacity.

The results are also familiar, as they build upon the output of the 575-hp 2016 M5 with the Competition package. Power jumps from 560 horsepower in the old base M5 to "about" 600, and torque increases from 500 pound-feet to approximately 516. The redline remains 7250 rpm.

The redesigned and lighter exhaust system is a bit louder than before, and there's a new button on the console to make it louder still. Its growl is deep but not obnoxious. Unfortunately, BMW continues to augment the V-8's roar through the audio system.

Most importantly, in the end, the switch from BMW's seven-speed dual-clutch automatic to the ZF eight-speed isn't something to lose sleep over. It's the same gearbox used in the 7-series and X5, but it's tuned by M for this application, and it's no slushbox. According to Häcker, the torque converter locks up before the car travels four feet, and it achieves "very close" to zero torque loss on the gearchanges.

There's a sport mode, one of three levels of shift intensity manipulated with a button on the shifter. In sport-plus mode, the eight-speed is telepathic, always downshifting when you want it to and upshifting at the engine's redline with a satisfying punch. Use the paddles and it responds quickly enough, plus it will hold gears at redline. You won't miss the dual-clutch.

Distinguishing it visually from the M550i xDrive are a straked hood, flared front fenders with vents, small lips on the rear wheelwells, sculpted rocker covers, M mirrors, and aggressive front and rear fascias. Inside, the M steering wheel retains its two configurable M Drive buttons (M1 and M2) that shortcut to your favorite setups among the zillion combinations of tune for the steering, suspension, traction/stability control, and drivetrain.

Production will begin soon after the car makes its debut at the Frankfurt auto show in September. In the meantime, we've been told that there are 100 M5 mules undergoing testing all over the world as Häcker's team finalizes the last 5 percent of development. When complete, all the hardware and software will likely migrate to the forthcoming 8-series.

Expect the finished product in dealerships early next year, by which time we may have forgotten about the Demon.

2018 BMW M5

VEHICLE TYPE: front-engine, rear-/all-wheel-drive, 5-passenger, 4-door sedan
BASE PRICE: $98,000 (est)
ENGINE TYPE: twin-turbocharged and intercooled DOHC 32-valve V-8, aluminum block and heads, direct fuel injection
DISPLACEMENT: 268 cu in, 4395 cc
POWER: 600 hp (est)
TORQUE: 516 lb-ft (est)
TRANSMISSION: 8-speed automatic with manual shifting mode

DIMENSIONS
WHEELBASE: 117.1 in
LENGTH: 194.6 in
WIDTH: 73.5 in
HEIGHT: 58.2 in
PASSENGER VOLUME: 99 cu ft
TRUNK VOLUME: 19 cu ft
CURB WEIGHT: 4300 lb

PERFORMANCE (*C/D* EST)
ZERO TO 60 MPH: 3.4 sec
ZERO TO 100 MPH: 7.7 sec
1/4-MILE: 11.5 sec
TOP SPEED: 180 mph

FUEL ECONOMY
EPA COMBINED/CITY/HWY: 17/15/22 mpg (est)

TESTED

A Crude Awakening

With the VW TDIs gone, Chevy's **Cruze diesel** finds itself alone in the oil-burning compact class. _by Joseph Capparella

ACROSS AMERICA, thousands of Volkswagen diesel owners are relinquishing their keys to dealers in exchange for generous buy-back checks. Where will they spend their dirty money? If the whole ordeal hasn't turned them off diesel entirely—a big "if"—General Motors is hoping to divert some of that cash toward its new, 100-percent-certified, completely legal turbo-diesel engine.

The 137-hp turbocharged 1.6-liter inline-four available now in the compact Chevrolet Cruze sedan—and soon in the Cruze hatchback and Chevy Equinox and GMC Terrain crossovers—powers this second-gen Cruze diesel and is one of only six light-duty oil burners certified by the EPA for the 2017 model year. The Clean Air Act won't be fooled twice.

And with those Golf, Jetta, and Passat TDIs now banished from the market and having little chance of returning anytime soon, the Cruze is the only 2017-model-year, sub-$30,000 diesel passenger car for sale today.

It starts at $24,670 with a six-speed manual transmission, $2950 more than an equivalent gas-powered Cruze LT sedan. Incidentally, that price is also smack-dab in the middle of the range of what VW estimates it will pay owners to buy back a 2015 Jetta TDI sedan. The optional nine-speed automatic ($1600) and the leather seating package that includes a heated steering wheel ($1125) drove our test car's price up to a not-insignificant $27,395.

The nine-speed 'box is an impressive unit, serving up smooth and seamless shifts and effectively dispatching the 240 pound-feet of torque. Despite a 20 percent reduction in displacement compared with the previous Cruze's 2.0-liter diesel, the new car hits 60 mph in an identical 8.0 seconds. Its aluminum engine block and lighter structure drop 364 pounds versus the last diesel-powered Cruze, improving the roadholding and braking numbers, too.

[+] Smart transmission, EPA-beating highway fuel economy. [–] Questionable value equation, it's not a VW Golf.

As with any alt-fueler, mileage is a crucial metric. It's up, too, both according to the EPA, which estimates 37 mpg combined—a 5-mpg bump over the old Cruze diesel—and our testing, where we matched that combined number. And, in our real-world, 75-mph highway-fuel-economy test, the diesel Cruze achieved 52 mpg, 6 better than the new Toyota Prius in the same test.

So the Chevrolet's numbers leave no doubt that it's capable of taking the diesel baton from Volkswagen. Unfortunately, the Cruze does not do a convincing VW impression in other regards. Its stiff structure makes for a commendable ride and handling balance, but it lacks the expertly tuned damping, sharp on-center steering feel, and overall solidity that make VW Golfs and Jettas so satisfying to drive. The Chevy's cabin also lags behind VW's impeccable interior quality.

Chevrolet may lure a few less-discerning TDI owners with the Cruze's promise of stellar fuel economy, but GM should note that the appeal of Volkswagen's TDIs far exceeded their powertrains.

tech highlight

PEACEFUL DIESEL

Chevy's 1.6-liter turbo-diesel earns its "whisper diesel" designation through multiple sound-reducing measures. Its timing drive is located inside the transmission housing, and it uses a structural oil pan, an isolated cam cover, and a bedplate that connects the main-bearing caps with the block. But its multiple-injection strategy, which reduces the cylinder-pressure rise rate by spreading the combustion event over a longer time period, is the primary silencing technology.

2017 CHEVROLET CRUZE DIESEL

VEHICLE TYPE: front-engine, front-wheel-drive, 5-passenger, 4-door sedan
PRICE AS TESTED: $27,395
BASE PRICE: $24,670
ENGINE TYPE: turbocharged and intercooled DOHC 16-valve diesel inline-4, aluminum block and head, direct fuel injection
DISPLACEMENT: 98 cu in, 1598 cc
POWER: 137 hp @ 3750 rpm
TORQUE: 240 lb-ft @ 2000 rpm
TRANSMISSION: 9-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 106.3 in
LENGTH: 183.7 in
WIDTH: 70.5 in
HEIGHT: 57.4 in
PASSENGER VOLUME: 94 cu ft
TRUNK VOLUME: 14 cu ft
CURB WEIGHT: 3123 lb

C/D TEST RESULTS

ZERO TO 60 MPH: 8.0 sec
ZERO TO 100 MPH: 23.9 sec
ZERO TO 120 MPH: 42.9 sec
ROLLING START, 5–60 MPH: 8.6 sec
1/4-MILE: 16.3 sec @ 85 mph
TOP SPEED: 130 mph (governor limited)
BRAKING, 70–0 MPH: 167 ft
ROADHOLDING, 300-FT-DIA SKIDPAD: 0.84 g*

FUEL ECONOMY

EPA COMBINED/CITY/HWY: 37/31/47 mpg
***C/D* OBSERVED:** 37 mpg

**Stability-control inhibited.*

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photography by MICHAEL SIMARI

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Bullet with Butterfly Wings

Advanced aero tweaks, added power, and cut weight combine to make the **Huracán Performante** Lamborghini's most daunting road-course killer. _by Csaba Csere

ANY REMAINING NOTION that Lamborghini builds look-at-me rolling billboards for prepubescent rock stars or 'roided-up cage fighters will be well and truly laid to rest by this new Huracán Performante. Think of the Performante as the GT3 version of the Huracán, a status that Lamborghini R&D chief Maurizio Reggiani has bestowed by pursuing four areas of improvement.

First came a roughly 90-pound weight loss, thanks to increased use of Lamborghini's patented Forged Composite carbon-fiber material in the front splitter, engine cover, rear bumper, and rear diffuser. There's also a 22-pound lighter exhaust system with simpler plumbing and a central outlet.

The V-10 engine gets feathery titanium intake valves, which pop open farther and longer to improve breathing, and a less restrictive air filter. The result is 631 horsepower, 29 more than the standard Huracán, developed at 8000 rpm, which is 250 rpm lower than the base car. The torque curve also swells by 30 pound-feet, meaning that the engine is stronger everywhere in its upper register.

[+] Blazing speed, benign limit handling, surprisingly comfortable, tremendous charisma.
[–] Expensive, needs a bigger tach.

To put this power to the ground, the Performante gets stiffer bushings, 10 percent stiffer springs, and thicker anti-roll bars for a 15 percent increase in roll stiffness. Optional recalibrated magnetorheological dampers complement these increases, and the rubber escalates from standard Pirelli P Zeros to the track-oriented P Zero Corsa tires. Even stickier P Zero Trofeo Rs are optional. Finally, the ALA package [see tech highlight] adds downforce to amplify these improvements.

We weren't heartbroken to evaluate these changes at the Imola racetrack, near Lamborghini's Sant'Agata Bolognese headquarters. Although the track has been reconfigured since Ayrton Senna's death in 1994, it is still an extremely fast circuit, well suited to powerful cars.

With the ANIMA—Lamborghini-speak for drive-mode selector—set to corsa, the car delivers its maximum downforce and stiffest damping response. Corsa also brings weighted-up steering with a linear and faster ratio plus completely manual shifting via its column-mounted paddles.

The experience was invigorating, with

2018 LAMBORGHINI HURACÁN PERFORMANTE

VEHICLE TYPE: mid-engine, all-wheel-drive 2-passenger, 2-door coupe
BASE PRICE: $280,000 (est)
ENGINE TYPE: DOHC 40-valve V-10, aluminum block and heads, port and direct fuel injection
DISPLACEMENT: 318 cu in, 5204 cc
POWER: 631 hp @ 8000 rpm
TORQUE: 443 lb-ft @ 6500 rpm
TRANSMISSION: 7-speed dual-clutch automatic with manual shifting mode

DIMENSIONS
WHEELBASE: 103.1 in
LENGTH: 177.4 in
WIDTH: 75.7 in
HEIGHT: 45.9 in
PASSENGER VOLUME: 46 cu ft
TRUNK VOLUME: 4 cu ft
CURB WEIGHT: 3350 lb

PERFORMANCE (C/D EST)
ZERO TO 60 MPH: 2.4 sec
ZERO TO 100 MPH: 5.6 sec
1/4-MILE: 10.2 sec
TOP SPEED: 202 mph

FUEL ECONOMY
EPA COMBINED/CITY/HWY: 17/14/21 mpg (est)

tech highlight

FLAPPING THOSE WINGS

Wings, spoilers, and other aerodynamic appendages appear on most racing cars because they generate downforce to increase grip without adding much mass. Unfortunately, downforce also creates drag, and most racing organizations don't allow the adjustments that would maximize the benefits while minimizing the downsides.

Street cars, however, suffer no such archaic restrictions, hence the movable aerodynamic devices on many high-performance models. The Performante employs a system called ALA, which stands for Aerodinamica Lamborghini Attiva. *Attiva* means "active," and the system uses a novel approach to alter the performance of its front and rear aerodynamic devices as needed.

In front, ALA uses a conventional-looking splitter. It operates by blocking air from flowing beneath the car and creating a high-pressure zone that presses down on the horizontal splitter. When the downforce is unnecessary, a pair of flaps in the grille open to allow the air to flow through to the underbody of the car, reducing both downforce and drag.

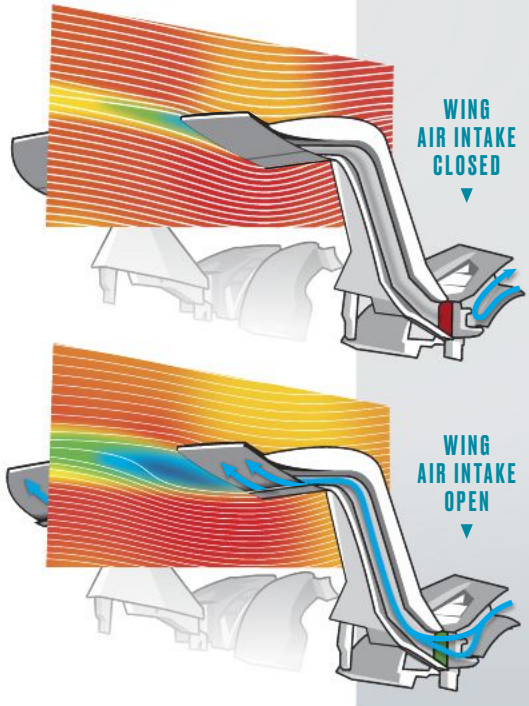
In the rear, the Performante has a prominent carbon-fiber wing mounted on a pair of tall, hollow struts. But instead of tilting the wing to alter its downforce and drag, Lamborghini fits a small air intake in front of each strut that feeds air through the hollow vertical members into the internal cavity of the wing. A row of slots on the wing's underside vents the air in the cavity into the car's wake.

When downforce is required, a small flap blocks this intake and prevents any airflow through the slots. The wing then acts normally, creating aero grip. But when low drag is more important than high downforce, small electric motors open the flaps and the resulting airflow through the slots reduces the pressure differential on the top and the bottom of the wing. The result is both lower downforce and less drag.

The linkage and high-force motors needed to change the angle of such a large wing would have added about 31 more pounds to the Performante than this simple flap-operated system. Moreover, the flaps can open and close in 0.5 second.

But there's another unique trick: Inside the hollow wing is a wall separating its inner chamber into two halves, making it possible to regulate downforce on each side of the wing separately. By creating downforce on only the inboard half of the wing during cornering, the system helps balance the load on the rear tires, while the increased drag there helps rotate the Performante into a corner.

The operation of these flaps, as well as the ones regulating the front splitter, is determined by vehicle conditions as well as the driving mode selected. They can alter the downforce from side to side quickly enough to improve performance on a slalom course, and maximum downforce at 193 mph is a substantial 770 pounds. Lamborghini engineers say that the Huracán Performante's record-breaking 6:52.1 Nordschleife lap—the legitimacy of which is still being questioned by some—would not have been possible without ALA. *—CC*



illustrations by PETE SUCHESKI

The last thing any Lambo needs is a more aggressive face with more-prominent fangs. But the Performante has 'em and the look is spectacularly menacing.

the engine screaming its bellicose roar as it charged toward the 8500-rpm redline so quickly that shifting without bouncing off the rev limiter required intense concentration. Acceleration in the lower gears is so strong that you feel the skin on your cheeks pulled rearward. But the instant action of the carbon-ceramic brakes felt reassuring, as did the direct-feeling steering and that taut suspension.

Within a few laps, we were seeing 170 mph on the longest straight and managing controlled all-wheel-drive slides through the chicanes, while using the curbing to straighten the car's line. Unlike some ultraperformance cars, the Performante's forgiving nature makes its performance accessible.

Flick the ANIMA to strada and you can trundle through city traffic with a comfortable ride and lighter steering. The seven-speed dual-clutch automatic transmission shifts smoothly, letting the engine loaf at low rpm, which it is perfectly happy to do.

Forward visibility is excellent, and the jet-fighter array of switches eventually becomes decipherable. Showy touches such as the safety cover that protects the engine-start switch might be gimmicks, but they're still part of what makes a Lamborghini feel special.

Such streetability in a car that just set a production-car lap record at the Nordschleife is astonishing. Lamborghini still has the flash, but now it's also accompanied by very impressive speed and refinement.

TESTED

Cross Country Dresser

Volvo's **V90 Cross Country** never tires of playing dress-up. _by Daniel Pund

IN THE GAME OF AUTOMOTIVE MASQUERADE that is the butch-wagon segment, dark-gray textured plastic is the equivalent of a kid's cowboy hat. It's the matte-plastic wheel-arch trim (and sometimes bumper-cover decoration) that says to buyers: "I've now become something else. Let's play."

And, though they must surely see the plain old station wagon underneath, buyers want to oblige. The dress-up wagons sell so much better than their donor versions that Subaru and Audi don't even bother offering the non-butch versions anymore. But if dark-gray plastic is the key to success in this game, consider the following weird fact: If you pay enough for your V90 Cross Country, Volvo paints those bits the color of the body, making the Cross Country look nearly identical to the standard V90 wagon that the company also sells but on special order only. We don't claim to understand this.

[+] Handsome exterior, gorgeous interior, practicality. [–] Pricey, inconsistent power delivery, mediocre control feel.

But boy, would a buyer pay enough if he chose a Cross Country equipped like our test vehicle. For 2017, the only available drivetrain configuration is the T6 model, which comes with a supercharged and turbocharged 316-hp 2.0-liter inline-four, an eight-speed automatic transmission, and all-wheel drive. It carries a $56,295 base price, but our test car cost $69,440 once it was loaded up with soft-leather interior trimmings, massaging front seats, heated rear outboard seats, four-zone climate control, a Bowers & Wilkins audio system, head-up display, air-spring rear suspension, metallic paint, and other niceties. (For '18, Volvo will also offer a less expensive 250-hp T5 model.)

This drops the Cross Country in the pricing chasm between the A4-based Audi Allroad and the Mercedes-Benz E400 wagon. The Volvo is the size of the Mercedes with an engine the size of the Audi's.

Even so, that four-cylinder generates impressive output (with 295 pound-feet of torque to go with its load of horsepower). And the 4266-pound Cross Country's 5.9-second run to 60 mph is plenty quick, if not quite on the pace of the Germans. The problem is the way in which that power is delivered. It surges and ebbs. If you're riding the torque wave, this wagon feels genuinely quick. Fall off it, though—as you frequently will—and the car feels breathless and wimpy. Climbing back up takes a moment, and the engine moans at the effort. The Cross Country turns in a middling braking performance, requiring 173 feet to stop from 70 mph. And the brakes are grabby and difficult to apply consistently. Its steering is indifferent.

We're glad to note that, despite wearing optional 20-inch wheels (in place of standard 19s), the Cross Country rides more comfortably than the somewhat flinty sedan on which it's based. Put the mode selector into dynamic should you want a less comfortable ride. The Cross Country's structure feels stouter than the sedan's. We chalk that up to the cushier ride. This is good, because we really want the V90 to be great. It looks stunning (especially in non–Cross Country dress), and the interior is beautifully designed and finished. It's roomy and practical. And dammit, we like wagons, even when they're festooned.

But for $70,000, we want more than a cowboy hat. In fact, we don't want a cowboy hat at all, but you know what we mean.

2017 VOLVO V90 CROSS COUNTRY T6 AWD

VEHICLE TYPE: front-engine, all-wheel-drive, 5-passenger, 4-door hatchback
PRICE AS TESTED: $69,440
BASE PRICE: $56,295
ENGINE TYPE: turbocharged, supercharged, and intercooled DOHC 16-valve inline-4; aluminum block and head; direct fuel injection
DISPLACEMENT: 120 cu in, 1969 cc
POWER: 316 hp @ 5700 rpm
TORQUE: 295 lb-ft @ 2200 rpm
TRANSMISSION: 8-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 115.8 in
LENGTH: 194.5 in
WIDTH: 74.0 in
HEIGHT: 60.8 in
PASSENGER VOLUME: 97 cu ft
CARGO VOLUME: 34 cu ft
CURB WEIGHT: 4266 lb

C/D TEST RESULTS

ZERO TO 60 MPH: 5.9 sec
ZERO TO 100 MPH: 14.5 sec
ZERO TO 130 MPH: 28.3 sec
ROLLING START, 5–60 MPH: 6.7 sec
1/4-MILE: 14.4 sec @ 99 mph
TOP SPEED: 131 mph (governor limited)
BRAKING, 70–0 MPH: 173 ft
ROADHOLDING, 300-FT-DIA SKIDPAD: 0.87 g

FUEL ECONOMY

EPA COMBINED/CITY/HWY: 25/22/30 mpg
***C/D* OBSERVED:** 21 mpg

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photography by GREG PAJO

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TESTED

The Lapper Gets Dapper

Holding the **Panamera Turbo** up to Porsche's sports cars reveals its true nature. _by Tony Quiroga

A PORSCHE SEDAN used to seem like a strange idea, and the first one, the Panamera, did indeed look strange. Mixing two incongruent design briefs—911 styling cues and a need for rear-seat head- and legroom—resulted in a four-door hunchback that appeared as if it had been elongated uncomfortably in traction. Each first-generation Panamera we tested drove brilliantly, with enough 911 in the controls to set it apart from its big-sedan competition, but let's be honest: That thing was hideous.

Cut to the second go-round, wherein the Panamera has a gently sloping roofline that complements the 911-like greenhouse and taillights. The long nose's headlights are reminiscent of the Boxster/Cayman side of the showroom. Quasimodo is now Prince Charming.

Plus, the sensations that come through the controls are even more sports-car-like. Decisive steering that delivers barely edited information from the tires and a hard brake pedal with stoppers that can halt the Turbo from 70 mph in 153 feet remind us of the 911. What differentiates the dynamics of the Panamera from those of the big sporting sedans sold by Audi, BMW, Maserati, and Mercedes is that Porsche tunes in sharp and raw controls that the others refine out.

[+] Porsche's sedan now looks as good as it goes. [–] Aside from the price, the doors are kind of hard to close.

But we wouldn't go so far as to say that the 4593-pound Panamera handles *exactly* like Stuttgart's sports cars. Porsche has thumbed its nose at Sir Newton for years, but a front-engine sedan with a 116.1-inch wheelbase and 53.5 percent of its weight over the front wheels will never act like a 911 or a 718. We do get the feeling that Porsche tried valiantly to make that happen, though. Every Panamera Turbo comes with control arms in front and a multilink rear suspension, each corner held up by an electronically controlled three-chamber air spring. Our test car added optional four-wheel steering and 21-inch wheels with 275/35ZR-21 Continental summer tires in front and 315/30ZR-21s in back. For those who really want to chase 911s, there's the $5000 Porsche Dynamic Chassis Control (PDCC) package, which bundles auto-adjusting electronically actuated anti-roll bars with brake-based torque vectoring and an electronically controlled limited-slip rear differential.

Even without dynamic anti-roll bars and torque vectoring, the Panamera Turbo glides through corners as if guided by an invisible hand. There's 0.94 g of stick and total stability at the limit. When pushed slightly beyond, the chassis releases with an easy and predictable ooze that avoids surprises. To keep weight in check, the floor, hood, doors, front structure, and body sides are aluminum, but there's no escaping the car's size and mass. We admit that we're holding handling to an unfair standard because of the other cars

Drivelines

photography by JAMES LIPMAN

2017 PORSCHE PANAMERA TURBO

VEHICLE TYPE: front-engine, all-wheel-drive, 4-passenger, 4-door hatchback
PRICE AS TESTED: $162,680
BASE PRICE: $151,050
ENGINE TYPE: twin-turbocharged and intercooled DOHC 32-valve V-8, aluminum block and heads, direct fuel injection
DISPLACEMENT: 244 cu in, 3996 cc
POWER: 550 hp @ 6000 rpm
TORQUE: 567 lb-ft @ 1960 rpm
TRANSMISSION: 8-speed dual-clutch automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 116.1 in
LENGTH: 198.8 in
WIDTH: 76.3 in
HEIGHT: 56.2 in
PASSENGER VOLUME: 96 cu ft
CARGO VOLUME: 17 cu ft
CURB WEIGHT: 4593 lb

C/D TEST RESULTS

ZERO TO 60 MPH: 3.0 sec
ZERO TO 100 MPH: 7.5 sec
ZERO TO 150 MPH: 18.6 sec
ROLLING START, 5–60 MPH: 4.3 sec
1/4-MILE: 11.3 sec @ 122 mph
TOP SPEED: 190 mph (drag limited, mfr's claim)
BRAKING, 70–0 MPH: 153 ft
ROADHOLDING, 300-FT-DIA SKIDPAD: 0.94 g

FUEL ECONOMY

EPA COMBINED/CITY/HWY: 21/18/25 mpg
***C/D* OBSERVED:** 17 mpg

Shell V-Power NiTRO+ Premium Gasoline
The Official Fuel of CAR AND DRIVER

that wear the Porsche crest. Against its competition, the Panamera is a track god.

It is, however, right and fitting to apply the sports-car standard to the Panamera Turbo's acceleration. Turbo models get a twin-turbocharged 4.0-liter V-8 with 550 horsepower and 567 pound-feet of torque. That power matches the 550 horses of the previous-generation's 4.8-liter Turbo S model. The 4.0-liter provides crisp throttle response and acts more like a big-displacement, naturally aspirated V-8 than an engine with two turbochargers. With the sport exhaust, a standalone option for $3490 or part of the $5580 Sport package, the engine purrs a mellow rumble that's never loud or obnoxious.

While the rest of the class has eight- or nine-speed conventional automatics, Porsche persists with a dual-clutch that adds one gear this year for a total of eight. Shifts are smooth and instant, and the dual-clutch's big trick, launch control, is also included in the Sport package or $2530 on its own. Spending the money frees the Panamera to do 5000-rpm clutch drops that, thanks to the Turbo's standard all-wheel drive, will make you gasp and cause anyone in the car to hyperventilate.

In just 3.0 seconds, the Panamera blurs to 60 mph, and the quarter passes in 11.3 seconds at 122 mph. In the 60-mph sprint, this Turbo is an even match for the now-dead 911 GT3 RS and quicker than every Porsche sports car we've recently tested with the exception of the 911 Turbos.

Eventually, we satisfied all the prurient needs of the 16-year-old inside us, stopped treating the Panamera like our stepdad's car, and started driving it the way most neurosurgeons will their $150,000 luxury limo. Turns out it's a spectacularly sumptuous sedan. Soft leather covers the instrument panel, and our test car came with optional carbon-fiber panels instead of wood. Despite the 21-inch wheels, the ride is compliant, noise levels reach only 65 decibels at 70 mph, and the 14-way front seats fit perfectly, even if they look a bit like Spock's ears. In the back are two more seats, and despite the plunging roofline, there's still plenty of headroom and space for the couple you're driving to dinner. The lightweight aluminum doors do take a slam to close, so maybe you'll want the $2790 Premium Package Plus that adds soft-closing doors.

It's only in comparison with Porsche's sports cars that the Panamera feels like a sedan. Compared with sports sedans, the Panamera feels like pure Porsche.

The last Panamera had enough buttons to stymie a 747 pilot. The characteristic herringbone arrangement of switches in the old car is gone, with many of those functions moved to the big 12.3-inch touchscreen that also handles audio, navigation, phone, and vehicle settings. As in Porsche's sports cars, an analog tachometer sits front and center; it's flanked by two seven-inch screens that display navigation maps, vehicle settings, speed, and other info.

Now that Porsche has well and truly fixed the Panamera's styling, there's not much to complain about aside from the price. This car remains at the head of its class in terms of handling and acceleration. Although its window sticker is in line with the Mercedes-AMG S63 and the BMW M760i, it should be noted that this rig costs a lot more than the Audi S8 Plus. But those big sedans always read as sedans; the Panamera Turbo's attraction lies in its meaningful connection to its brand's heritage. This is really more of a modern-day 928—a four-seat GT with a V-8 up front and build quality commensurate with the price. Perhaps it's no coincidence then, that in the early '90s, a 928 cost about $80,000. Adjust that for inflation and you get the Panamera Turbo's $150,000 base price. Porsche's internal code for the Panamera is 971, but maybe it ought to subtract a few dozen numerals.

And the Beat Goes On

Audi's new **SQ5** high-performance crossover is more of the same, only better. _by Joseph Capparella

IT'S BEEN A WHILE since Audi did anything that surprised us. So perhaps we should have known that the new, second-generation Audi SQ5 would be much like the old SQ5. It's yet another new Audi that's more of a refinement of a familiar formula than a true redesign.

Still, it's better than the old one in just about every way. There is a new engine, with the old SQ5's supercharged 3.0-liter V-6 giving way to a turbocharged 3.0-liter V-6 (meaning the "T" in Audi's V6T badge finally stands for turbo). It makes the same 354 horsepower as before, but torque rises by 23 pound-feet, and it comes on sooner in the rev range, making it a very usable lump that needn't be wound out to be exploited.

The powertrain impresses with its flexiblity. In comfort mode, the eight-speed auto shifts imperceptibly and doesn't call attention to itself. Switch to dynamic mode and the gearbox wakes up, popping off prompt upshifts and downshifting aggressively as you brake for a corner. Paddle shifters let you manage gearchanges manually, and dynamic mode brings some hints of overrun through the exhaust, enhancing the V-6's throaty engine note.

While the standard Q5 adopts a new, more efficient Quattro with Ultra system that can disconnect the rear driveshaft to save fuel, the SQ5 sticks with the classic Quattro setup, which uses a helical-gear limited-slip center differential. There's a torque-vectoring rear differential included in the $3000 S Sport package that also adds an air suspension providing roughly four inches of height adjustability.

The SQ5 we drove was equipped with those extras and they work, making for an entertaining crossbreed that's both fast and functional. We estimate the zero-to-60 time at a tick over five seconds. The combination of air suspension and standard adaptive dampers creates a wide range of dynamic character among the four drive modes. We'd prefer more feedback from the steering, but its weighting is well tuned to the various modes, and the attractive flat-bottomed wheel, with just the right rim thickness, is a joy to hold.

As we've come to expect from Audi, the interior is impeccably assembled and the materials look and feel well made. Audi's optional virtual-cockpit instrument cluster ($2600) presents lots of information directly in the driver's line of sight in a clear, attractive, and highly configurable manner.

If there's any area where the SQ5 falls short of competitors such as the Jaguar F-Pace and the Alfa Romeo Stelvio, it is in visual drama. Those who prefer stealth may love the Audi's subdued looks, but its shape does little to differentiate it from the previous model and conceals the athleticism found within.

The SQ5 may tread in the footsteps of its predecessor, but it also extends the path in meaningful ways. And though we might not be surprised, we are impressed. We imagine that its buyers will be, too.

[+] Flexible powertrain, capable chassis, upscale interior.
[–] Same-old styling, performance-enhancing features cost extra.

2018 AUDI SQ5

VEHICLE TYPE: front-engine, all-wheel-drive, 5-passenger, 4-door hatchback
BASE PRICE: $55,275
ENGINE TYPE: turbocharged and intercooled DOHC 24-valve V-6, aluminum block and heads, direct fuel injection
DISPLACEMENT: 183 cu in, 2995 cc
POWER: 354 hp @ 6400 rpm
TORQUE: 369 lb-ft @ 1370 rpm
TRANSMISSION: 8-speed automatic with manual shifting mode

DIMENSIONS
WHEELBASE: 111.2 in
LENGTH: 183.9 in
WIDTH: 74.5 in
HEIGHT: 65.3 in
PASSENGER VOLUME: 102–106 cu ft
CARGO VOLUME: 27 cu ft
CURB WEIGHT: 4400 lb

PERFORMANCE (*C/D* EST)
ZERO TO 60 MPH: 5.1 sec
ZERO TO 100 MPH: 13.0 sec
1/4-MILE: 13.6 sec
TOP SPEED: 155 mph

FUEL ECONOMY
EPA COMBINED/CITY/HWY: 21/19/24

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Old Faithful

Honda's 2018 **Odyssey** offers parent-friendly features, new infotainment, and seating options aplenty. _by Dave VanderWerp

KILAUEA, THE MOST ACTIVE of the five volcanoes that make up Hawaii's Big Island and continue to make the land mass bigger, has had nine major eruptions since 1790. As recently as 1974, it blew its top sufficiently to destroy the surrounding roads in the southeast corner of the island. But most days it just percolates along, venting a perpetual plume of sulfur dioxide while searing red magma gurgles for the tourists who funnel by for a glimpse.

While piloting Honda's new family hauler in this geologically intense location, thoughts turned to the minivan's somewhat more predictable cadence of four melt-and-repour overhauls since its model-year 1995 debut. But even these eruptions have spared much; both the SOHC V-6's 3.5-liter displacement and the 118.1-inch wheelbase haven't budged since the 1999 second generation, including this 2018 overhaul that moves to the latest architecture shared with the Pilot crossover and the Ridgeline pickup. This time, the Odyssey is slightly (0.7-inch) narrower, a change made to boost aerodynamics. Highway fuel economy improves 1 mpg to 28, the same rating as the Chrysler Pacifica, despite an increase of 32 horsepower and 12 pound-feet of torque enabled by direct injection.

One of the Odyssey's key distinguishing features and a reason it's won all but one of the comparison tests in which it's competed is the sense of verve from behind the wheel absent from most practicality-minded vehicles. This is something that remains a priority, promises chief engineer Chad Harrison. It shows: The ride feels taut, snubbing vertical motions on the Elite model's 19-inch wheel-and-tire package (we didn't drive the rest of the lineup, which wears 18s, an inch larger than before). While cinching down the suspension, engineers dialed in more fore-aft compliance to reduce impact harshness, and the new Odyssey structure is resolutely solid. It also, for the first time, incorporates a rear anti-roll bar into its Odyssey-specific multilink suspension. The steering ratio is more than 10 percent quicker than before, and its rack-mounted electrically assisted power steering is substantially more precise than the Pilot's column-mounted assist. However, the brake pedal feels a bit soft, just as it does on its platform-mates.

[+] Spectacularly comfortable seats, extremely hushed, taut suspension, improved infotainment. [–] Seats are difficult to remove, too few USB ports.

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Above left: Honda's new infotainment runs the Android operating system and is a huge improvment. Above: The black mamba is optional.

dren. Specifically, your author's own kids, ages eight, six, and four, fresh from travel across six time zones and each on the precipice of their own awe-inspiring eruptions. Naturally, they couldn't be bothered with spectacular ocean views or lava-rock formations, instead gravitating to the rear-seat entertainment system, which shrinks from the ceiling-mounted 16.2-inch split screen to a 10.2-inch single-view setup in the same location. In the mix for the first time is 4G Wi-Fi, with built-in streaming apps to take advantage of it. The onboard vacuum is back to clean up after snackers, and there are new ways to surveil them [see Spy Wear].

Comfort in all three rows continues to be sumptuous, one advantage of not having second-row seats slim enough to fold into the floor, as in the Pacifica. Honda's latest innovation is its center-row seating with buckets that can slide 13 inches laterally, each with five latching locations, all while retaining fore-aft adjustability. Honda demonstrated a variety of configurations—seats together, apart, or one seat tucked up close between the fronts. We uncovered one more: Gladiator mode, which is what happens when seated occupants realize they can reach the adjustment lever and then try to crash into their second-row mate with maximum velocity. Although these seats are removable, it's awkward to do so as they're heavy and leave behind a not-quite-flat load floor.

The Odyssey adds a full complement of driver-assist technologies to EX and higher trims (accounting for roughly 95 percent of sales), and the top two trim levels, Touring and Elite, introduce the first ever front-drive, 10-speed automatic, offering one of the widest ratio spreads in transmissiondom. Part-throttle upshifts are extremely smooth, but we found some wide-open-throttle downshifting inconsistencies; sometimes a swift and direct multigear kickdown, other times a lazy response and multiple downshift steps. All other trim levels get the Pilot's ZF nine-speed, with promises of improved shift smoothness.

Honda's next-generation, Android-based infotainment system makes its debut here, an 8.0-inch-touchscreen up front that eventually will replace the laggy and generally unsatisfying systems across its lineup. The layout is tabletlike, with quick response times, a volume knob—a twirling innovation rediscovered by the latest CR-V—and Android Auto and Apple CarPlay connectivity. There's also an app to enable smartphone control of the climate, navigation, and rear-seat entertainment systems. But even the top trims skimp on USB ports, with a total of just three.

All models get thicker glass than before and are far better sealed, including acoustic foam sprayed into 14 areas to keep noise at bay. The top Elite trim adds even more sound-mitigating measures: acoustically insulating laminated glass for the front and sliding doors (a laminated windshield is fitted to the EX-L and above), as well as additional fender liners and thicker carpet.

All in, it's a compelling update that should keep the Odyssey energized until its next big event.

2018 HONDA ODYSSEY

VEHICLE TYPE: front-engine, front-wheel-drive, 7- or 8-passenger, 4-door van
BASE PRICE: $30,930
ENGINE TYPE: SOHC 24-valve V-6, aluminum block and heads, direct fuel injection
DISPLACEMENT: 212 cu in, 3471 cc
POWER: 280 hp @ 6000 rpm
TORQUE: 262 lb-ft @ 4700 rpm
TRANSMISSIONS: 9-speed automatic with manual shifting mode, 10-speed automatic with manual shifting mode

DIMENSIONS
WHEELBASE: 118.1 in
LENGTH: 203.2 in
WIDTH: 78.5 in
HEIGHT: 68.3–69.6 in
PASSENGER VOLUME: 163–167 cu ft
CARGO VOLUME: 39 cu ft
CURB WEIGHT: 4400–4600 lb

PERFORMANCE (*C/D* EST)
ZERO TO 60 MPH: 6.5 sec
ZERO TO 100 MPH: 16.4 sec
1/4-MILE: 15.1 sec @ 112 mph
TOP SPEED: 112 mph

FUEL ECONOMY
EPA COMBINED/CITY/HWY: 22/19/28 mpg

Spy Wear

DOMESTIC SURVEILLANCE

There's a new way for parents to peep at the wee rear-seat royalty. An available camera mounted above the second row—Honda calls it CabinWatch—can send a wide-angle feed of what's going on back there to the front center-stack screen. How is this better than a convex mirror (which remains from the last Odyssey), you ask? It's a much larger image, for one, plus it offers the ability to zoom in on an individual second- or third-row occupant. It also eliminates the need to rig a second mirror to view the angelic countenance of those in rear-facing child seats, and it includes infrared light for nighttime viewing. The slow frame rate makes the feed a little jumpy, and we occasionally wished it had a "record" function to use as evidence in subsequent parental-court hearings.

Another new feature, CabinTalk, has the stewardesslike power to pause the movie playing and broadcast announcements through the headphones (or, on the Elite, also through the third-row speakers). Unlike Toyota's PA feature, it can be cranked up past the point of feedback. Because every minivan commander wants to ensure they're heard when they declare, "This is your captain speaking." *–DV*

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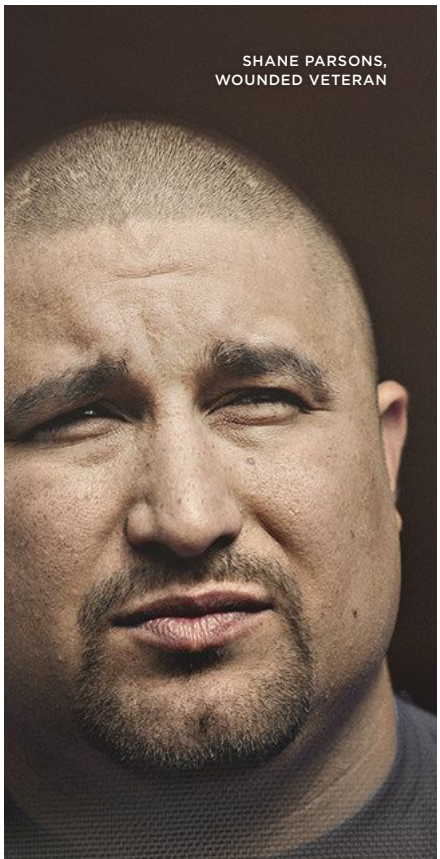

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Walter Röhrl, 70

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► *interview by* MIKE DUFF

C/D: ***What did you do before your first factory drive at age 24?***

WR: I was working for the Catholic Church, in the administration of farm land. It meant lots of sitting in a car; in one year I did [74,565 miles]. I drove a big Mercedes, a diesel. It was slow but taught me to look far ahead and not to brake so I could carry speed. It was a good school for me.

■ ***You drove Audis during rallying's notorious Group B period. Did you see that as the pinnacle?***

☐ For the emotion, yes, and for the power. Normally people say that if you have a lot of horsepower it makes it easy to win, but it's not like this with rallying. It's much easier to have less horsepower if everyone has the same. But, for me, it was perfect, those 500-hp cars, and with four-wheel drive it was not a question of traction. Get the car in the direction you want and then go flat out. There was more skill to rear-wheel drive, where my favorite car was the Lancia 037. With 325 horsepower and weighing [2116 pounds], it was precise like a Formula racing car. That was the one I liked the most.

■ ***Group B was canceled at the end of 1986 after Henri Toivonen's fatal crash. Did you agree that speeds had become too fast?***

☐ For me it was bad when Group B got canceled. The big advantage is that I didn't need to listen to my co-pilot so much, I had 90 percent [of the course] in my head—the film was running and I knew what to expect, even without pace notes. But the spectators were something I cannot understand, even today. I see the films and I am shocked by what I have done, how close people were. After every event I said, "One day, I will kill five people." Sure, they could jump away, but if something happened to the car and I crashed, it would be a disaster.

■ ***You were always selective about sponsors. Is it true you refused to do a promotion for a tobacco company?***

☐ It was the Rothmans people. They asked me to make an advertising movie before the Monte Carlo [rally], when I was using every minute to prepare. I said if I win you can do it, but from that moment onwards it was just like this [smacks hands]. So I always tell everybody you should not smoke.

■ ***Alongside Ari Vatanen, you were one of the first European rally drivers to attempt Pikes Peak, winning and breaking the course record in 1987. How did that compare to rallying?***

☐ First of all, I was a little bit scared—one week there and I had a total driving time of 30 minutes. But I loved the course, a nice gravel road. I always like roads where you are penalized when you make a mistake. I don't like racetracks because crazy people can go fast, but not rallying, and not Pikes Peak. For me it was not like the satisfaction that you have won a rally though; 10 minutes of driving and I made no mistakes. It is more interesting to do [a rally] and make no mistakes.

■ ***After rallying, you went racing, including Trans-Am in a 510-hp Audi 200 Quattro. That must have made circuit racing exciting.***

☐ I never had the satisfaction on a racetrack like on a rally stage. Well, maybe once, at Niagara Falls in 1988. It was a city race, very bumpy, two and a half hours long and all these big concrete walls. That was something more like rally driving. I remember after practice somebody saying: "Have you seen this German guy? Tomorrow he won't even manage three laps, he's so close to the walls." I lapped everyone except Scott Pruett to win. It was the one moment I was truly happy with race driving.

■ ***You moved into developing road cars, most famously for Porsche and on the Nürburgring. How many laps have you driven there, and why do you feel such an affinity for the place?***

☐ I don't know how many, but thousands. I like it because it's not like most circuits; if you make a mistake, then bang, you are in the fence or in the forest. If all the racetracks were like the Nürburgring I would have been a [road-racing] driver, and if you want to make a perfect car you have to test it there, that's why it works so well for Porsche. I never get bored there; every lap is a new challenge.

■ ***Any thoughts of retirement?***

☐ I am thinking about it. I am 70 and still crazy, but the time is coming. I have made the first step, I stopped development driving on the Nürburgring. I'm still in one piece after 45 years of motorsport; maybe it's time to be a bit quiet.

■ ***What would you do differently?***

☐ I was too long with Opel, that was a mistake. I had won my first title, European Champion, and I thought "I cannot leave now." But the car was useless and I wasted two years. The rest was okay. People ask, "You had the chance to be champion five or six times, why didn't you do more rallies?" And I say I didn't want to be world champion even once, I just wanted to win Monte Carlo. That was the aim of my life, the rest was nothing to me.

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